DCR-PC1/PC1E
RMT-808/809

SERVICE MANUAL

Self Diagnosis Supported model

Ver 1.0 1998. 07

CM Cassette Memory

Handycam

D200 MECHANISM

Photo: DCR-PC1E
RMT-809

US Model
Canadian Model
DCR-PC1
AEP Model
UK Model
Australian Model
Chinese Model
DCR-PC1E
E Model
Hong Kong Model
Tourist Model
DCR-PC1/PC1E

DCR-PC1: NTSC model
DCR-PC1E: PAL model

For MECHANISM ADJUSTMENTS, refer to the “DV MEHCANICAL ADJUSTMENT MANUAL Ⅰ D MECHANISM ” (original: 9-973-815-11, supplement: 9-973-815-81) and “DV MECHANICAL ADJUSTMENT MANUAL Ⅲ D200 MECHANISM ” (original: 9-973-981-11).

SPECIFICATIONS

Video camera recorder

System

Video recording system
Two rotary heads, Helical scanning system
Audio recording system
Rotary heads, PCM system
Quantization: 12bits (Fs 32kHz, stereo 1, stereo 2), 16bits (Fs 48KHz, stereo)
Video signal
NTSC color, EIA standards (PC1)
PAL colour, CCIR standards (PC1E)
Usable cassette
Mini DV cassette with logo printed
Recording/playback time
SP mode: 1 hour (DVM60)
LP mode: 1.5 hours (DVM60)
Fastforward/rewind time
Approx. 3 min. 30 s (DVM60)
Viewfinder
Electric viewfinder (colour)
Image device
CCD (Charge Coupled Device 1/4”)
Lens
Combined power zoom lens (Carl Zeiss), 10x (Optical), 120x (Digital), (PC1/PC1E: except AEP, UK), 40x (Digital) (PC1E: AEP, UK)
Focal distance
f = 3.3 to 33 mm
(42 to 420 mm when converted into a 35 mm still camera)
F 1.7 – 2.2
Colour temperature
Auto
HOLD, INDOOR ☼ 3,200K,
OUTDOOR ☀ 5,800K
Minimum illumination
5 lux at F 1.7
Illumination range
5 to 100,000 lux
Recommended illumination
More than 100 lux

LCD screen

Picture
2.5 inches measured diagonally
50.015 x 37.428 mm
On-screen display
TN LCD/TFT active matrix method
Total dot number
180,000 (800 x 225)

Input and output connectors

S video output
4-pin mini DIN
Luminance signal: 1 Vp-p, 75 ohms, unbalanced, sync negative
Chrominance signal:
0.286 Vp-p (PC1),
0.3 Vp-p (PC1E),
75 ohms, unbalanced
Audio Video/Headphones output
Special minijack
V: 1 Vp-p, 75 ohms, unbalanced, sync negative
A: 327 mV (at output impedance more than 47 kilohms)
Output impedance with less than 2.2 kilohms
Headphones: Stereo minijack (ø 3.5 mm)
DV input/output (PC1/PC1E: except AEP, UK), DV output (PC1E: AEP, UK)
4-pin connector
MIC input
Stereo minijack (ø 3.5mm):0.388mV, DC2.5V
Input impedance 6.8 kilohms
LANC jack
Stereo miniminijack (ø 2.5 mm)

General

Power requirements
3.6 V (battery insertion input)
Average power consumption
3.2 W during camera recording using viewfinder
4.5 W during camera recording using LCD screen
Operating temperature
0°C to 40°C (32°F to 104°F)
Storage temperature
–20°C to 60°C (–4°F to 140°F)
Dimensions
Approx. 52 x 119 x 92.5 mm
(2 1/8x4 3/4x3 3/4 inches)
(w/h/d) excluding projecting parts
Mass
Approx. 460 g (1 lb.) excluding the battery pack and the cassette
Approx. 530 g (1 lb. 2 oz.) including the battery pack NP-F10 and cassette DVM60
Microphone
Electret condenser microphone, Stereo type
Speaker
Dynamic speaker
Supplied accessories
See page 2.

— Continued on next page —

Mini DV Digital Video Cassette

DIGITAL VIDEO CAMERA RECORDER

MICROFILM

SONY®

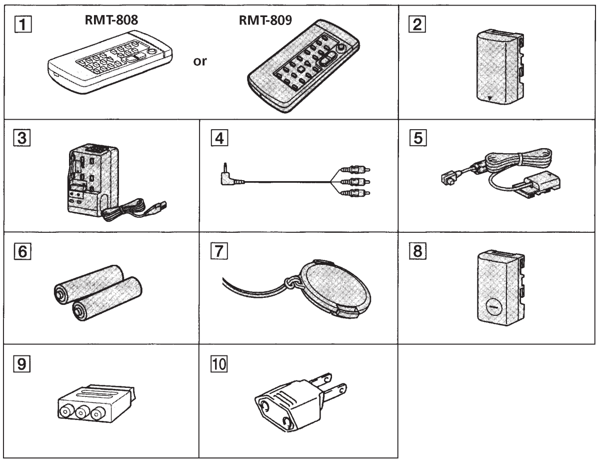
AC power adaptor

Power requirements
100 to 240 V AC, 50/60 Hz
Power consumption
4.2 W
Output voltage
DC OUT: 4.2 V, 1.8 A in operating mode
Battery charge terminal: 4.2 V, 1.5 A in charge mode
Application
Sony battery pack NP-F10, NP-F20, NP-F30 lithium ion type
Operating temperature
0°C to 40°C (32°F to 104°F)
Storage temperature
–20°C to 60°C (–4°F to 140°F)
Dimensions
Approx. 49 x 39 x 85 mm
(1 15/16x1 6/19x3 3/8 inches)
(w/h/d)
Mass
Approx. 120 g (4.2 oz.)

Design and specifications are subject to change without notice.

• SUPPLIED ACCESSORIES

Check that the following accessories are supplied with your camcorder.



1 **Wireless Remote Commander** (1)
RMT-808 (DCR-PC1/PC1E: EXCEPT AEP, UK)
RMT-809 (DCR-PC1E: AEP, UK)

2 **NP-F10 battery pack** (1)

3 **AC-VF10 AC power adaptor** (1)
The shape of the plug varies from region to region.

4 **A/V connecting cable** (1)

5 **DK-115 connecting cord** (1)

6 **R6 (size AA) battery for Remote Commander** (2)

7 **Lens cap** (1)
This lens cap is already set on your camcorder.

8 **Battery terminal cover** (1)

9 **21-pin adaptor (1)**
DCR-PC1E=AEP, UK

10 **2-pin conversion adaptor** (1)
E, Hong Kong, Tourist

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFÉS PAR UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈSES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPÉMENTS PUBLIÉS PAR SONY.

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer.

1. Check the area of your repair for unsoldered or poorly-soldered connections. Check the entire board surface for solder splashes and bridges.
2. Check the interboard wiring to ensure that no wires are "pinched" or contact high-wattage resistors.
3. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
4. Look for parts which, through functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.
5. Check the B+ voltage to see it is at the values specified.
6. Flexible Circuit Board Repairing
   - Keep the temperature of the soldering iron around 270˚C during repairing.
   - Do not touch the soldering iron on the same conductor of the circuit board (within 3 times).
   - Be careful not to apply force on the conductor when soldering or unsoldering.

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* The optical axis frame and color reproduction frame is shown on page 215.

SERVICE NOTE

1. POWER SUPPLY DURING REPAIRS

In this unit, about 10 seconds after power is supplied (4.2V) to the battery terminal using the regulated power supply, the power is shut off so that the unit cannot operate.
This following two methods are available to prevent this. Take note of which to use during repairs.

Method 1.

Connect the servicing remote commander RM-95 (J-6082-053-B) to the LANC jack, and set the remote commander switch to the "ADJ" side.

Method 2.

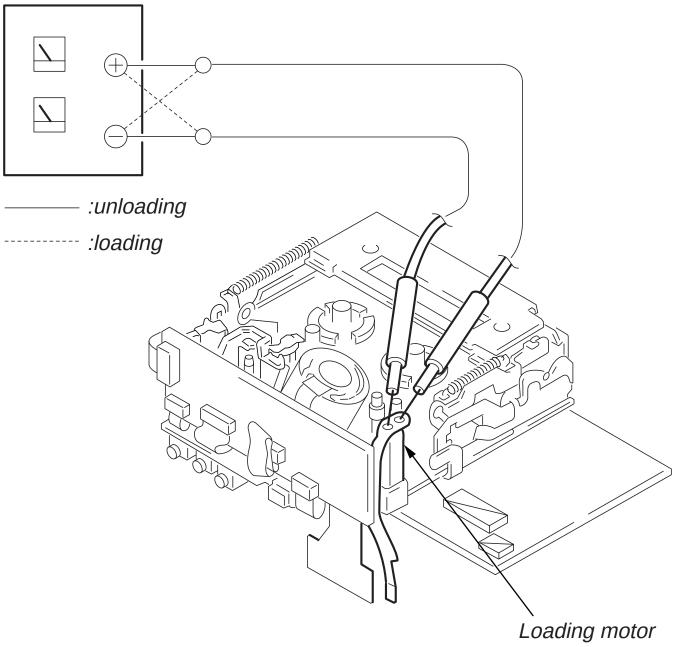
Use the AC power adaptor.

2. HOW TO TAKE A CASSETTE OUT WHEN THE MAIN POWER CANNOT BE TURNED ON

Note: To take a cassette out forcibly as follows when the main power cannot be turned on, remove the cabinet (L) assembly. Apply +4.5 V power from an external power supply to the loading motor, as shown below. Refer to sections 2-1 and 2-2 for the procedure to remove the cabinet (L) assembly.

Procedure:

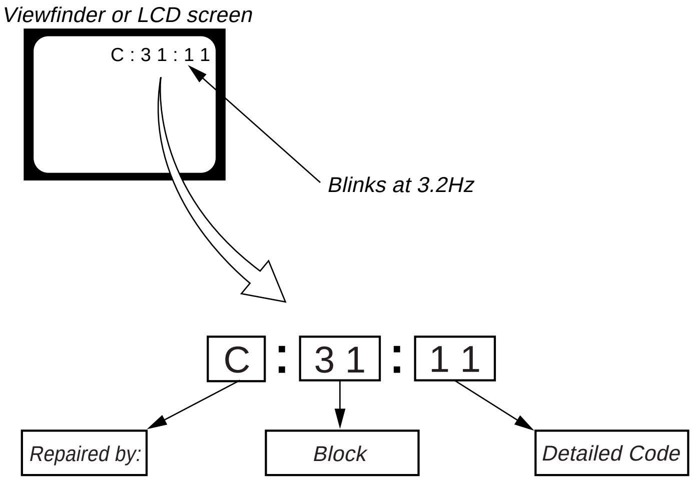
1) Disconnect the CN2504 of the MR-40 board.
2) Apply +4.5 V directly to the loading motor as shown to drive the loading motor that ejects a cassette.



SELF-DIAGNOSIS FUNCTION

1. SELF-DIAGNOSIS FUNCTION

When problems occur while the unit is operating, the self-diagnosis function starts working, and displays on the viewfinder or LCD screen what to do. This function consists of two display; self-diagnosis display and service mode display.
Details of the self-diagnosis functions are provided in the Instruction manual.



Repaired by:	Block	Detailed Code
C : Corrected by customer H : Corrected by dealer E : Corrected by service engineer	Indicates the appropriate step to be taken. E.g. 31 ....Reload the tape. 32 ....Turn on power again.	Refer to page 7. Self-diagnosis Code Table.

2. SELF-DIAGNOSIS DISPLAY

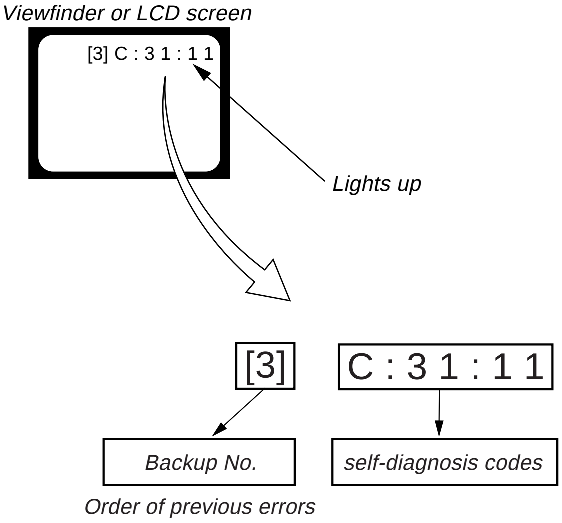
When problems occur while the unit is operating, the counter of the viewfinder shows a 4-digit display consisting of an alphabet and numbers, which blinks at 3.2 Hz. This 5-character display indicates the “repaired by:”, “block” in which the problem occurred, and “detailed code” of the problem.

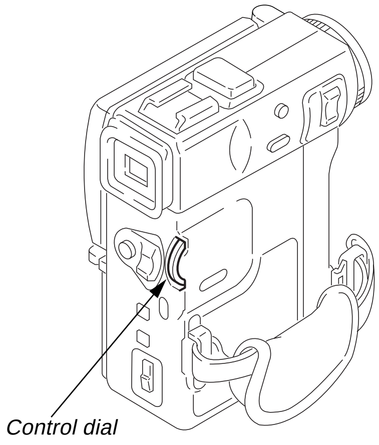
3. SERVICE MODE DISPLAY

The service mode display shows up to six self-diagnosis codes shown in the past.

3-1. Display Method

While pressing the “STOP” key, set the switch from OFF to “CAMERA” or “VTR or PLAYER”, and continue pressing the “STOP” key for 10 seconds continuously. The service mode will be displayed, and the counter will show the backup No. and the 5-character self-diagnosis codes.





3-2. Switching of Backup No.

By rotating the control dial, past self-diagnosis codes will be shown in order. The backup No. in the [] indicates the order in which the problem occurred. (If the number of problems which occurred is less than 6, only the number of problems which occurred will be shown.)

[1] : Occurred first time
[2] : Occurred second time
[3] : Occurred third time
[4] : Occurred fourth time
[5] : Occurred fifth time
[6] : Occurred the last time

3-3. End of Display

Turning OFF the power supply will end the service mode display.

Note: The self-diagnosis display data will be backed up by the coin-type lithium battery. When this coin-type lithium battery (CN2507 of MR-40 board) is disconnected, the self-diagnosis data will be lost by initialization.

4. SELF-DIAGNOSIS CODE TABLE

Self-diagnosis Code			Symptom/State	Correction
Repaired by:	Block Function	Detailed Code		
C	2 1	0 0	Condensation.	Remove the cassette, and insert it again after one hour.
C	2 2	0 0	Video head is dirty.	Clean with the optional cleaning cassette.
C	2 3	0 0	Non-standard battery is used.	Use the info LITHIUM battery.
C	3 1	1 0	LOAD direction. Loading does not complete within specified time	Load the tape again, and perform operations from the beginning.
C	3 1	1 1	UNLOAD direction. Loading does not complete within specified time	Load the tape again, and perform operations from the beginning.
C	3 1	2 0	T reel side tape slacking when unloading.	Load the tape again, and perform operations from the beginning.
C	3 1	2 1	Winding S reel fault when counting the rest of tape.	Load the tape again, and perform operations from the beginning.
C	3 1	2 2	T reel fault.	Load the tape again, and perform operations from the beginning.
C	3 1	2 3	S reel fault.	Load the tape again, and perform operations from the beginning.
C	3 1	2 4	T reel fault.	Load the tape again, and perform operations from the beginning.
C	3 1	3 0	FG fault when starting capstan.	Load the tape again, and perform operations from the beginning.
C	3 1	4 0	FG fault when starting drum.	Load the tape again, and perform operations from the beginning.
C	3 1	4 2	FG fault during normal drum operations.	Load the tape again, and perform operations from the beginning.
C	3 1	1 0	LOAD direction loading motor time-out.	Remove the battery or power cable, connect, and perform operations from the beginning.
C	3 1	1 1	UNLOAD direction loading motor time-out.	Remove the battery or power cable, connect, and perform operations from the beginning.
C	3 2	2 0	T reel side tape slacking when unloading.	Remove the battery or power cable, connect, and perform operations from the beginning.
C	3 2	2 1	Winding S reel fault when counting the rest of tape.	Remove the battery or power cable, connect, and perform operations from the beginning.
C	3 2	2 2	T reel fault.	Remove the battery or power cable, connect, and perform operations from the beginning.
C	3 2	2 3	S reel fault.	Remove the battery or power cable, connect, and perform operations from the beginning.
C	3 2	2 4	T reel fault.	Remove the battery or power cable, connect, and perform operations from the beginning.
C	3 2	3 0	FG fault when starting capstan.	Remove the battery or power cable, connect, and perform operations from the beginning.
C	3 2	4 0	FG fault when starting drum	Remove the battery or power cable, connect, and perform operations from the beginning.
C	3 2	4 2	FG fault during normal drum operations	Remove the battery or power cable, connect, and perform operations from the beginning.
E	6 1	0 0	Difficult to adjust focus (Cannot initialize focus.)	Inspect the lens block focus reset sensor (Pin ① of CN450 of CD-203 board) when focusing is performed when the focus ring is rotated in the focus manual mode, and the focus motor drive circuit (IC501 of VC-210 board) when the focusing is not performed.
E	6 1	1 0	Zoom operations fault (Cannot initialize zoom lens.)	Inspect the lens block zoom reset sensor (Pin ⑲ of CN450 of CD-203 board) when zooming is performed when the zoom lens is operated and the zoom motor drive circuit (IC501 of VC-210 board) when zooming is not performed.
E	6 2	0 0	Steadyshot function does not work well. (With pitch angular velocity sensor output stopped.)	Inspect pitch angular velocity sensor (SE451 of CD-203 board) peripheral circuits.
E	6 2	0 1	Steadyshot function does not work well. (With yaw angular velocity sensor output stopped.)	Inspect yaw angular velocity sensor (SE450 of CD-203 board) peripheral circuits.

SECTION 1
GENERAL

This section is extracted from instruction manual of DCR-PC1E (3-864-275-51).

Using this manual

As you read through this manual, buttons and settings on the camcorder are shown in capital letters.
e.g., Set the POWER switch to CAMERA.

Note on Cassette Memory

This camcorder is based on the DV format. You can only use mini DV cassettes with this camcorder. We recommend you to use a tape with cassette memory CM.

The functions which depend on whether the tape has the cassette memory or not are:
- End Search (p. 30)
- Date Search (p. 72)
- Photo Search (p. 76)

The functions you can operate only with the cassette memory are:
- Superimposing a title (p. 61)
- Making a custom title (p. 66)
- Labeling a cassette (p. 68)
- Title Search (p. 75)

For details, see page 89.

Note on TV colour systems

TV colour systems differ from country to country. To view your recordings on a TV, you need a PAL system-based TV.

Precaution on copyright

Television programmes, films, video tapes, and other materials may be copyrighted. Unauthorized recording of such materials may be contrary to the provision of the copyright laws.

Использование данного руководства

Когда Вы будете читать данное руководство, учитывайте, что кнопки и установки на видеокамере показаны заглавными буквами.
Прим. Установите выключатель POWER в положение CAMERA.

Примечание к кассете с памятью

Данная видеокамера базируется на цифровом видеоформате DV. Вы можете использовать на данной видеокамере только кассеты mini DV. Мы рекомендуем Вам использовать ленты кассет mini DV с памятью CM.

Следующие функции будут зависеть от того, используется ли лента кассеты с память или нет:
- Поиск конца (стр. 30)
- Поиск даты (стр. 72)
- Фотопоиск (стр. 76)

Следующими функциями Вы можете управлять только при использовании кассеты с памятью:
- Наложение титра (стр. 61)
- Создание собственного титра (стр. 66)
- Обозначение кассеты (стр. 68)
- Поиск титра (стр. 75)

Подробности см. на стр. 89.

Примечание к системам цветного телевидения

Системы цветного телевидения отличаются в зависимости от страны. Для просмотра Ваших записей по телевизору Вам необходимо использовать телевизор, основанный на системе PAL.

Предостережение об авторском праве

Телевизионные программы, кинофильмы, видеоленты и другие материалы могут быть защищены авторским правом. Неправомочная запись таких материалов может противоречить условиям закона об авторском праве.

Using this manual

Precautions on camcorder care

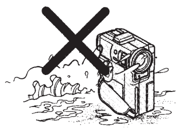
- **The LCD screen and/or the colour viewfinder are manufactured using high-precision technology. However, there may be some tiny black points and/or bright points (red, blue or green in colour) that constantly appear on the LCD screen and/or in the viewfinder. These points are normal in the manufacturing process and do not affect the recorded picture in any way. Over 99.99% are operational for effective use.**
- Do not let the camcorder get wet. Keep the camcorder away from rain and sea water. Letting the camcorder get wet may cause the unit to malfunction, and sometimes this malfunction cannot be repaired **[a]**.
- Never leave the camcorder exposed to temperatures above 60°C (140°F), such as in a car parked in the sun or under direct sunlight **[b]**.

Использование данного руководства

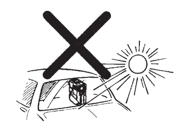
Предосторожности по уходу за видеокамерой

- **Экран ЖКД и/или цветной видоискатель выполнены с применением высокопрецизионной технологии. Однако, крошечные черные точки и/или яркие точки света (красные, синие или зеленые в цвете) могут постоянно появляться на экране ЖКД и/или в видоискателе. Эти точки считаются нормальным явлением в процессе съемки и никак не влияют на записываемое изображение. Свыше 99,99% экрана предназначенно для эффективного использования.**
- Не позволяйте видеокамере делаться влажной. Предохраняйте видеокамеру от дождя или морской воды. Если Вы намочите видеокамеру, то это может вызвать неисправность аппарата, и в некоторых случаях эта неисправность не подлежит ремонту **[a]**.
- Никогда не оставляйте видеокамеру в месте с температурой свыше 60°C (140°F), как например, в автомобиле, остановленном на солнце или под прямыми солнечными лучами **[b]**.

[a]



[b]

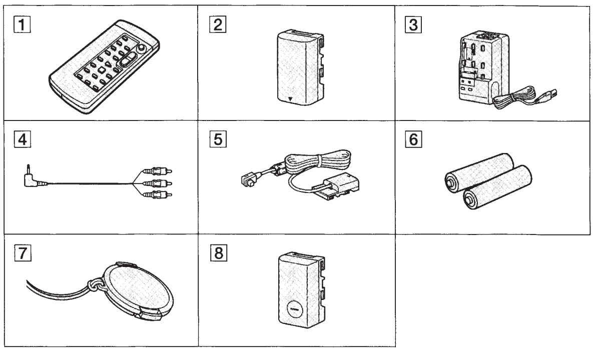


Contents of the recording cannot be compensated if recording or playback is not made due to a malfunction of the camcorder, video tape, etc.

Содержимое записи не может быть компенсировано, если запись или воспроизведение не выполняется вследствие повреждения видеокамеры, видеоленты и т.д.

Checking supplied accessories

Check that the following accessories are supplied with your camcorder.



1. **Wireless Remote Commander** (1) (p. 125)
2. **NP-F10 battery pack** (1) (p. 8)
3. **AC-VF10 AC power adaptor** (1) (p. 8, 31)
   The shape of the plug varies from region to region.
4. **A/V connecting cable** (1) (p. 41, 70, 83)
5. **DK-115 connecting cord** (1) (p. 31)
6. **R6 (size AA) battery for Remote Commander** (2) (p. 126)
7. **Lens cap** (1) (p. 14)
   This lens cap is already set on your camcorder.
8. **Battery terminal cover** (1) (p. 11)

Проверка прилагаемых принадлежностей

Проверьте, что следующие принадлежности прилагаются к Вашей видекамере.

1. **Беспроводный пульт дистанционного управления** (1) (стр. 125)
2. **Батарейный блок NP-F10** (1) (стр. 8)
3. **Сетевой адаптер перем. тока AC-VF10** (1) (стр. 8, 31)
   Форма вилочного разъема отличается в зависимости от региона использования.
4. **Соединительный кабель аудио/видео** (1) (стр. 41, 70, 83)
5. **Соединительный шнур DK-115** (1) (стр. 31)
6. **Батарейка R6 (размером AA) для пульта дистанционного управления** (2) (стр.126)
7. **Крышка объектива** (1) (стр. 14)
   Крышка объектива уже установлена на Вашу видокамеру.
8. **Крышка батарейных контактов** (1) (стр. 11)

Charging and installing the battery pack

Before using your camcorder, you first need to charge and install the battery pack. To charge the battery pack, use the supplied AC power adaptor.
This camcorder operates only with the "InfoLITHIUM" battery pack (S series).

"InfoLITHIUM" is a trademark of Sony Corporation.

Charging the battery pack

(1) Connect the mains lead to the AC power adaptor.
(2) Align the hooks of the battery pack with the AC power adaptor. Then fit the battery pack in the direction of the arrow.
(3) Connect the mains lead to mains. The CHARGE lamp (orange) lights up. Charging begins.

When the CHARGE lamp goes out, **normal charge** is completed. For **full charge**, which allows you to use the battery longer than usual, leave the battery pack in place for approximately one hour after the CHARGE lamp goes out.
Unplug the unit from the mains, then remove the battery pack and install it into the camcorder.
You can also use the battery pack before it is completely charged.

Зарядка и установка батарейного блока

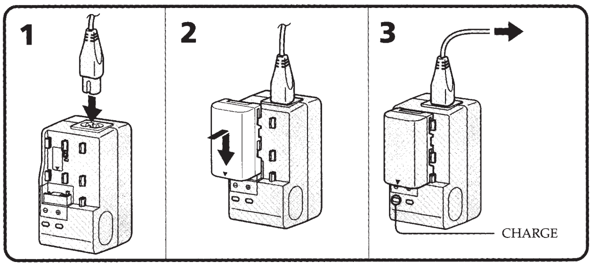
Перед использованием Вашей видеокамеры Вам нужно сперва зарядить и установить батарейный блок. Для зарядки батарейного блока используйте прилагаемый сетевой адаптер переменного тока.
Данная видеокамеа работает только от батарейного блока "InfoLITHIUM"(серии S).

"InfoLITHIUM" является товарным знаком корпорации Sony.

Зарядка батарейного блока

(1) Подсоедините сетевой провод к сетевому адаптеру перем. тока.
(2) Совместите крючки батарейного блока с сетевым адаптером переменного тока. Затем двигайте батарейный блок в направлении стрелки.
(3) Подсоедините сетевой провод к электрической сети. Лампочка CHARGE (оранжевая) будет гореть. Зарядка началась.

Когда лампочка CHARGE погаснет, **нормальная зарядка** завершена. Для **полной зарядки**, которая позволяет Вам использовать батарейный блок дольше, чем обычно оставьте батарейный блок на месте приблизительно на один час после того, как погаснет лмпочка CHARGE.
Отсоедините аппарат от электрической сети. а затем снимите батарейный блок и установите его на видеокамеру. Вы также можете использовать батарейный блок до того, как он полностью зарядится.



Charging and installing the battery pack

Charging time

Battery pack	Charging time *
NP-F10 (supplied)	145 (85)
NP-F20	220 (160)
NP-F30	295 (235)

The time required for a normal charge is indicated in parentheses.
Only the battery packs listed above can be used with this camcorder.

* Approximate minutes to charge an empty battery pack using the supplied AC power adaptor. (Lower temperatures require a longer charging time.)

Battery life

Upper numbers are the time when recording with the viewfinder. Lower numbers are the time when recording with the LCD screen. Using both will further reduce recording time.

Battery pack	Continuous recording time **	Typical recording time ***	Playing time with LCD
NP-F10 (supplied)	55 (50) 35 (30)	30 (25) 20 (15)	40 (35)
NP-F20	115 (105) 75 (70)	60 (55) 40 (35)	80 (75)
NP-F30	170 (155) 120 (105)	85 (75) 65 (60)	125 (110)

Numbers in parentheses indicate the time when you use a normally charged battery.
Battery life will be shorter if you use the camcorder in a cold environment.

** Approximate continuous recording time at 25°C (77°F).

*** Approximate minutes when recording while you repeat recording start/stop, zooming and turning the power on/off. The actual battery life may be shorter.

Зарядка и установка батарейного блока

Время зарядки

Батарейный блок	Время зарядки*
NP-F10 (прилагается)	145 (85)
NP-F20	220 (160)
NP-F30	295 (235)

Числа в скобках указывают время для нормальной зарядки.
Только вышеперечисленные батарейные блоки могут быть использованы с данной видеокамерой.

* Приблизительное время в минутах для зарядки полностью разряженного батарейного блока с использованием прилагаемого сетевого адаптера переменного тока. (При более низких температурах потребуется более длительное время зарядки.)

Срок службы заряда батарейного блока

Верхние цифры указывают время при записи с помощью видоискателя. Нижние цифры указывают время при записи с помощью экрана ЖКД. Использование их обоих значительно снижает время записи.

Батарейный блок	Время непрерывной записи**	Время типичной записи***	Время воспроизведения на ЖКД
NP-F10 (прилагается)	55 (50) 35 (30)	30 (25) 20 (15)	40 (35)
NP-F20	115 (105) 75 (70)	60 (55) 40 (35)	80 (75)
NP-F30	170 (155) 120 (105)	85 (75) 65 (60)	125 (110)

Числа в скобках указываю время, когда Вы используете нормально заряженный батарейный блок.
Срок службы заряда батарейного блока будет короче, если Вы используете видеокамеру в холодных условиях.

** Приблизительное время непрерывной записи при температуре 25°C (77°F).

*** Приблизительное время в минутах при записи с повторным началом/остановом записи, режимом готовности, наездом видеокамеры и включением/выключением питания. Фактический срок службы заряда батарейного блока может быть короче.

Charging and installing the battery pack

About NP-F10
The battery life will be shorter when you carry out recording in a cold place or with the LCD panel open. We recommend that you use the NP-F20/F30 large capacity battery pack (not supplied).

When using the battery pack in a cold place
Keep it warm by putting it into your pocket and install it in the camcorder just before recording.

Notes on remaining battery time indication during recording

- Remaining battery time is displayed on the LCD screen or in the viewfinder. However, the indication may not be displayed properly, depending on using conditions and circumstances.
- When you close the LCD panel and open it again, it takes about 1 minute for the correct remaining time to be displayed.

To remove the battery pack

Slide the battery pack in the direction of the arrow.

Зарядка и установка батарейного блока

Относительно NP-F10
Срок службы заряда батарейного блока будет короче, когда Вы выполняете запись в холодном месте или с открытой панелью ЖКД. Мы рекомендуем, чтобы Вы использовали батарейный блок NP-F20/F30 с большей емкостью (не прилагается).

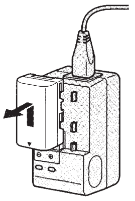
При использовании батарейного блока в холодных условиях
Сохраняйте его теплым, положив его в карман, и устанавливайте его в видеокамеру непсредственно перед выполнением записи.

Примечания к индикации оставшегося времени работы батарейного блока во время записи

- Оставшееся время работы батарейного блока отображается на экране ЖКД или в видоискателе. Однако, индикация может отображаться неправильно в зависимости от условий и обстоятельств использования.
- Когда Вы закрываете панель ЖКД и открываете ее снова, требуется приблизительно 1 минута для правильного отображения оставшегося времени.

Для снятия батарейного блока

Двигайте батарейный блок в направлени стрелки.



Notes on charging the battery pack

- The CHARGE lamp will remain lit for a while even if the battery pack is removed and the mains lead is unplugged after charging the battery pack. This is normal.
- If the CHARGE lamp does not light, disconnect the mains lead. After about one minute, reconnect the mains lead again.
- When a fully charged battery pack is installed, the CHARGE lamp will light once, then go out.

Примечания к зарядке батарейного блока

- Лампочка CHARGE остается горящей на протяжении некоторого времени, даже если батарейный блок снят и сетевой провод отсоединен от сети после зарядки батарейного блока. Это является нормальным.
- Если лампочка CHARGE не горит, отсоедините сетевой провод. Приблизительно через одну минуту снова подсоедините сетевой провод.
- Когда установлен полностью заряженный батарейный блок лампочка CHARGE загорится один раз, а затем погаснет.

Charging and installing the battery pack

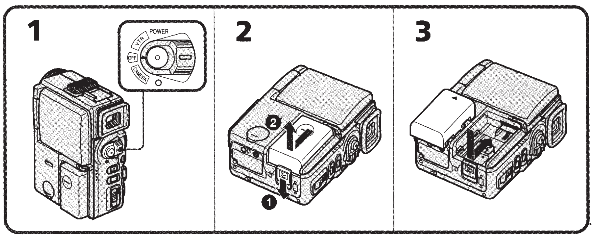
Installing the battery pack

(1) Set the POWER switch to OFF to prevent misoperation of the camcorder.
(2) To remove the battery pack
While sliding BATT RELEASE in the direction of the arrow ❶, slide the battery terminal cover in the direction of the arrow ❷.
(3) Insert the battery pack in the direction of the arrow.

Зарядка и установка батарейного блока

Установка батарейного блока

(1) Установите выключатель POWER в положение OFF во избежание неправиьной работы видеокамеры.
(2) Для сняти батарейного блока
Двигая BATT RELEASE в направлении стрелки ❶, передвиньте крышку батарейных контактов в направлении стрелки ❷.
(3) Вставьте батарейный блок в направлении стрелки.



To remove the battery pack

The battery pack is removed in the same way as the battery terminal cover.

Note on battery terminal cover
To protect the battery terminals, install the battery terminal cover after the battery pack is removed.

You can look at the demonstration of the functions available with this camcorder (p. 37).

Для снятия батарейного блока

Батарейный блок снимается таким же образом, как и крышка батарейных контактов.

Примечание к крышке батарейных контактов
Для защиты батарейных контактов установите крышку батарейных контактов после снятия батарейного блока.

Вы можете просмотреть демонстрацию функций, имеющихся в наличии у данной видеокамеры (стр. 37).

Inserting a cassette

Вставка кассеты

You can use mini DV cassette with Mini DV logo* only.
Make sure that the power source is installed.

(1) Slide ⏏ OPEN/EJECT in the direction of the arrow ❶ and open the lid in the direction of the arrow ❷. The cassette compartment automatically lifts up and opens.

(2) Push the middle portion of the back of the tape to insert a cassette.
Insert the cassette in a straight line deeply into the cassette compartment with the window facing out .

(3) Close the cassette compartment by pressing the PUSH mark on the cassette compartment. The cassette compartment automatically goes down.

(4) After the cassette compartment going down completely, close the lid until it clicks.

* Mini DV is a trademark.

Вы можете использовать только кассету mini DV, со знаком Mini DV*.
Убедитесь, что источник питания установлен.

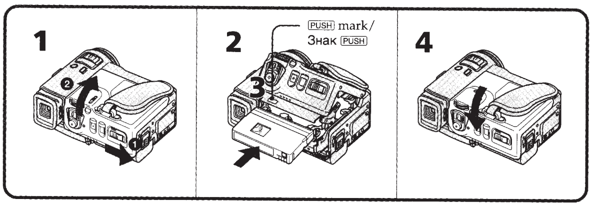
(1) Сдвиньте ⏏ OPEN/EJECT в направлении стрелки ❶ и откройте крышку в направлении стрелки ❷. Кассетный отсек автоматически выдвинется и откроется.

(2) Нажмите среднюю часть на задней стороне ленты, чтобы вставить кассету. Вставьте кассету по прямой линии глубоко в кассетный отсек с окошком, обращенным наружу.

(3) Закройте кассетный отсек нажав на знак PUSH на кассетном отсеке. Кассетный отсек автоматически опустится вниз.

(4) После того, как кассетный отсек полностью опустится, закройте крышку пока она не защелкнется.

* Mini DV является товарным знаком.



To eject the cassette

Follow the procedure above and in step 2, take out the cassette.

Для выталкивания кассеты

Следуя вышеописанной процедуре в пункте 2, выньте кассету.

Notes

- Do not put forcibly the cassette into the cassette compartment. Doing so may damage the camcorder.
- When you open the lid immediately after you install the battery, the cassette compartment may not open. Close the lid and open it again.
- The cassette compartment may not be closed when you press any part of the lid other than the PUSH mark.
- Be careful not to get your fingers caught in the cassette lid.
- When you insert and eject a cassette, set the POWER switch to OFF to prevent misoperation of the camcorder.

To prevent accidental erasure

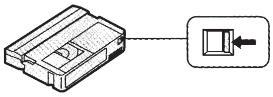
Slide and open the tab on the cassette to expose the red mark. If you try to record with the red mark exposed, the ⊠ and ⏏ indicators flash on the LCD screen or in the viewfinder, and you cannot record on the tape. To re-record on this tape, slide and close the tab to cover the red mark.

Примечания

- Не вставляйте кассету силой в кассетный отсек. Такое действие может повредить видеокамеру.
- Когда Вы открываете крышку сразу же после установки батарейного блока, кассетный отсек может не открыться. Закройте крышку и откройте ее опять.
- Кассетный отсек может не закрываться, если Вы нажимаете какую-либо часть крышки, кроме знака PUSH.
- Будьте осторожны, чтобы не защемить Ваши пальцы крышкой кассеты.
- Когда Вы вставляете и выталкиваете кассету, установите выключатель POWER в положение OFF во избежание неправильной работы видеокамеры.

Для предотвращения случайного стирания

Сдвиньте и откройте лепесток на кассете, чтобы было видно красную метку. Если Вы попытаетесь выполнить запись при видимой красной метке, то индикаторы ⊠ и ⏏ будут мигать на экране ЖКД или в видоискателе, и Вы не сможете произвести запись на эту ленту. Для выполнения новой записи на такую ленту сдвиньте и закройте лепесток для закрытия красной метки.



Basic operations

Camera recording

Основные операции

Запись с помощью видеокамеры

Make sure that the power source is installed and a cassette is inserted and that the START/STOP MODE switch (p. 19) is set to ⛓. Before you record one-time events, you may want to make a trial recording to make sure that the camcorder is working correctly.
When you use the camcorder for the first time, power on it and reset the date and time to your time before you start recording (p. 92).

(1) Remove the lens cap and pull the lens cap string to fix it.

(2) Pull out the viewfinder until it clicks.

(3) While pressing the small green button on the POWER switch, set it to CAMERA. The power lamp under the POWER switch flashes and the camcorder is set to Standby mode.

(4) Press START/STOP.
The camcorder starts recording. The "REC" indicator appears in the viewfinder. The camera recording lamp on the front of the camcorder also lights up.

You can also select Recording mode, SP (standard play) mode or LP (long play) mode. Set REC MODE in the menu system according to the length of your planned recording before you start.

Убедитесь, что источник питания установлен,кассета вставлена и переключатель START/STOP MODE (стр. 19) установлен в положение ⛓. Перед тем как Вы начнете запись одноразовых событий, Вы можете захотеть сделать пробную запись для подтверждения, что видеокамера работает правильно.
Если Вы используете видеокамеру в первый раз, то включите ее и установите дату и время на Ваше местное время перед началом записи (стр. 92).

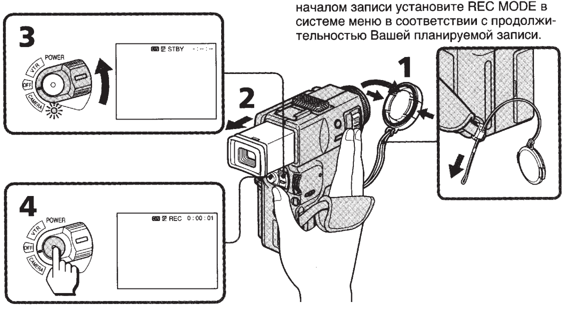
(1) Снимите крышку объектива и потяните за шнурок крышки объектива для ее фиксации.

(2) Вытаскивайте видоискатель до тех пор, пока он не защелкнется.

(3) Нажимая маленькую зеленую кнопку на выключателе POWER, установите его в положение CAMERA. Лампочка питания под выключателем POWER будет мигать и видеокамера будет установлена на режим готовности.

(4) Нажмите START/STOP.
Видеокамера начинает запись. В видоискателе появляется индикатор "REC". Лампочка записи камерой, расположенная на передней панели видеокамеры, также будет гореть.

Вы также можете выбрать режим записи SP (стандартное воспроизведение) или LP (удлиненное воспроизведение). Перед началом записи установите REC MODE в системе меню в соответствии с продолжительностью Вашей планируемой записи.



Notes on the viewfinder
When the viewfinder is not pulled out until it clicks, the picture does not appear in the viewfinder.

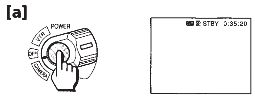
Примечания к видоискателю
Если видоискатель не выдвинут до того, как он защелкнется, изображение не будет появляться в видоискателе.

To stop recording momentarily [a]

Press START/STOP. The "STBY" indicator appears in the viewfinder **(Standby mode)**.

To finish recording [b]

Press START/STOP again to stop recording. Set the POWER switch to OFF. Then, eject the cassette and remove the battery pack.



When you use mini DV cassette with cassette memory
Read the instruction about cassette memory to use this function properly (p. 89).

To focus the viewfinder lens

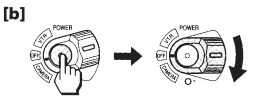
If you cannot see the indicators in the viewfinder clearly, or after someone else has used the camcorder, focus the viewfinder lens. Move the viewfinder lens adjustment lever so that the indicators in the viewfinder come into sharp focus.

Для временной остановки записи [a]

Нажмите START/STOP. Индикатор "STBY" появляется в видоискателе **(режим готовности)**.

Для окончания записи [b]

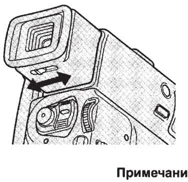
Снова нажмите START/STOP для остановки записи. Установите выключатель POWER в положение OFF. Затем вытолкните кассету и удалите батарейный блок.



Когда Вы используете кассету mini DV имеющую память
Прочитайте инструкции относительно памяти кассеты для правильного использования данной функции (стр. 89).

Для фокусировки объектива видоискателя

Если Вы не можете четко видеть индикаторы в видоискателе или после того, как кто-то другой использовал видеокамеру, выполните фокусировку объектива видоискателя. Предвиньте рычаг регулировки объектива видоискателя, так, чтобы индикаторы в видоискателе были четко сфокусированы.



Note on Standby mode
If you leave the camcorder in Standby mode for 5 minutes while the cassette is inserted, the camcorder turns off automatically. This prevents wearing down the battery and wearing out the tape. To resume Standby mode, while pressing the small green button on the POWER switch, set it to OFF once, and then to CAMERA. To start recording, press START/STOP.

Примечание к режиму готовности
Если Вы оставляете видеокамеру в режиме готовности на 5 минут при вставленной кассете, видеокамера выключится автоматически. Это предотвращает расход заряда батарейного блока и износ ленты. Для восстановления режима готовности, нажимая маленькую зеленую кнопку на выключателе POWER , сперва установите его в положение OFF, а затем в положение CAMERA. Для начала записи нажмите START/STOP.

Note on Recording mode

This camcorder records and plays back in SP (standard play) mode and in LP (long play) mode. Select SP or LP in the menu system. In LP mode, you can record 1.5 times as long as in SP mode.

Notes on LP mode

- We recommend to use this camcorder to play back a tape recorded on this camcorder. If a tape recorded on other camcorder is played back on this camcorder, or vice versa, mosaic-pattern noise may appear.
- When you record in SP and LP modes on one tape or you record some scenes in LP mode, the playback picture may be distorted or the time code may not be written properly between scenes.
- When you record in LP mode, we recommend you to use a Sony Excellence/Master mini DV cassette so that you can get the most out of your camcorder.
- You cannot make audio dubbing on a tape recorded in LP mode. Use the SP mode for the tape to be audio dubbed.

Notes on the time code

- The time code indicates the recording or playback time, "0:00:00" (hours : minutes : seconds) in CAMERA mode and "0:00:00:00" (hours : minutes : seconds : frames) in VTR mode.
- Be sure not to make a blank portion when recording, because the time code will start from "0:00:00:00" again, and you cannot rewrite the time code on the tape.
- This camcorder uses the drop frame mode.

Примечание к режиму записи

Данная видеокамера может выполнять запись и воспроизведение в режиме SP (стандартное воспроизведение) и в режиме LP (удлиненное воспроизведение). Выберите SP или LP в системе меню. В режиме LP Вы можете выполнить запись продолжительностью в 1,5 раза длинее, чем в режиме SP.

Примечания к режиму LP

- Мы рекомендуем использовать данную видеокамеру для воспоизведения лент, записанных на этой же видеокамере. Если лента, записанная на другой видеокамере, воспроизводится на данной видеокамере или наоборот, могут появляться помехи с мозаичной структурой.
- Если Вы выполняете запись в режимах SP и LP на одной и той же ленте или записываете некоторые эпизоды в режиме LP, то воспроизводимое изображение может быть искажено или же временной код между сценами может быть записан неправильно.
- Если Вы выполняете запись в режиме LP, мы рекомендуем Вам использовать кассеты Sony Excellence/Master mini DV, чтобы Вы могли получить наибольшую отдачу от Вашей видеокамеры.
- Вы не можете выполнить наложение звукового сопровождения на ленте, записанной в режиме LP. Используйте режим SP для записи ленты, на которую Вы хотите наложить звуковое сопровождение.

Примечания к временному коду

- Временной код указывает время записи или воспроизведения, "0:00:00" (часы : минуты : секунды) в режиме CAMERA и "0:00:00:00" (часы : минуты : секунды : кадры) в режиме VTR.
- Ни в коем случае не оставляйте незаписанных участков во время записи, так как временной код снова будет начинаться с отсчета "0:00:00:00" и Вы не сможете перезаписать временной кода на ленту.
- Данная видеокамера использует режим пропуска кадра.

Note on the beep sound

The beep sounds when you operate the camcorder. Several beeps also sound as a warning of any unusual condition of the camcorder.
Note that the beep sound is not recorded on the tape. If you do not want to hear the beep sound, select "OFF" in the menu system.

Note on remaining tape indicator

The indicator may not be displayed accurately depending on the tape. Though the indicator does not appear at the time of recording, it will appear in a few seconds.

Using the zoom feature

Zooming is a recording technique that lets you change the size of the subject in the scene.
For more professional-looking recordings, use the zoom function sparingly.

"**W**" side: for wide-angle (subject appears farther away)
"**T**" side: for telephoto (subject appears closer)

Примечание к зуммерному звуковому сигналу

Зуммерный сигнал звучит, когда Вы управляете видеокамерой. Несколько зуммерных сигналов также будет звучать в качестве предупреждения какого-нибудь необычного состояния видеокамеры.
Заметьте, что зуммерный звуковой сигнал не записывается на ленту. Если Вы не хотите слушать зуммерный звуковой сигнал, то выберите "OFF" в системе меню.

Примечание к индикатору оставшейся ленты

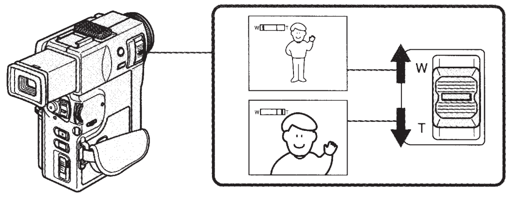
Индикатор может отображаться неточно в зависимости от ленты. Хотя индикатор не отображается в момент включения записи, он появится через несколько секунд.

Использование функции наезда видеокамеры

Наезд видеокамеры является техническим приемом записи, который позволяет Вам изменять размер объекта в кадре. Для более профессионального вида записей умеренно используйте функцию наезда видеокамеры.

Сторона "**W**": для широкого угла съемки (объект удаляетя)
Сторона "**T**": для телефото (объект приближается)

Basic operations Основные операции



Zooming speed (Variable speed zooming)

Move the power zoom lever a little for a relatively slow zoom; move it still more for a high-speed zoom.

Скорость наезда видеокамеры (наезд с различной скоростью)

Передвиньте рычаг приводного трансфокатора немного для сравнительно медленного наезда видеокамеры; передвиньте его еще дальше для наезда на высокой скорости.

When you shoot a subject using a telephoto zoom

If you cannot get a sharp focus while in extreme telephoto zoom, move the power zoom lever to the "W" side of the power zoom lever until the focus is sharp. You can shoot a subject that is at least about 80 cm away from the lens surface in the telephoto position, or about 1 cm away in the wide-angle position.

Notes on digital zoom

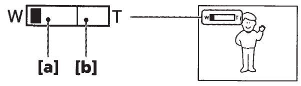
- More than 10x zoom is performed digitally, and the picture quality deteriorates as you go toward the "T" side. If you do not want to use the digital zoom, set the D ZOOM function to OFF in the menu system.
- The right side **[b]** of the power zoom indicator shows the digital zooming zone, and the left side **[a]** shows the optical zooming zone. If you set the D ZOOM function to OFF, the **[b]** zone disappears.

Когда Вы снимаете объект, используя наезд в режиме телефото

Если Вы не можете получить четкой фокусировки во время крайнего наезда в режиме телефото, перемещайте рычаг приводного трансфокатора в сторону "W" рычага приводного трансжокатора до тех пор, пока Вы не получите четкой фокусировки. Вы можете снимать объект, который по меньшей мере на 80 см удален от поверхности объектива в положении телефото, или удален приблизительно на 1 см в положении широкого угла.

Примечания к цифровому трансфокатору

- Трансфокатор с более, чем 10-кратным увеличением создан в цифровом исполнении, и качество изображения ухудшается по мере Вашего движения в сторону "T". Если Вы не хотите использовать цифровой трансфокатор, установите функцию D ZOOM в системе меню на OFF.
- Правая сторона **[b]** индикатора приводного трансфокатора показывает зону цифровой трансфокации, а левая сторона **[a]** показывает зону оптической трансфокации. Если Вы установите функцию D ZOOM на OFF, то зона **[b]** исчезнет.



Selecting the start/stop mode

Your camcorder has two modes besides normal start/stop mode. These modes enable you to take a series of quick shots resulting in a lively video.

(1) Set START/STOP MODE to the desired mode.
⊻ : Recording starts when you press START/STOP, and stops when you press it again (factory setting).
⊥ ANTI GROUND SHOOTING : The camcorder records only while you press down START/STOP so that you can avoid recording unnecessary scenes.
5SEC : When you press START/STOP, the camcorder records for about 5 seconds and then stops automatically.

(2) Press START/STOP. Recording starts.

If you selected **5SEC**, five dots appear in the viewfinder or on the LCD screen. The dots disappear at a rate of one per second as illustrated below. When five seconds elapse and all the dots disappear, the camcorder switches to Standby mode automatically.

Выбор режима запуска/останова

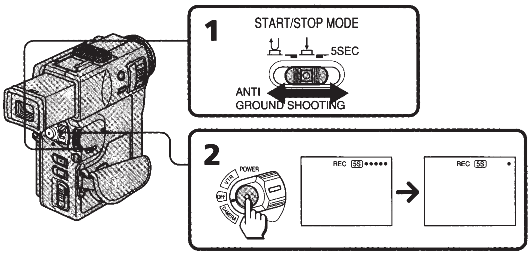
Ваша видеокамера имеет два режима, кроме нормального режима запуска/останова. Эти режимы позволяют Вам снять серию коротких кадров, создавая в результате оживленную видеопрограмму.

(1) Установите переключатель START/STOP MODE на желаемый режим.
⊻ : Запись начинается когда Вы нажимаете START/STOP и заканчивается, когда Вы нажимаете эту кнопку снова (заводская установка).
⊥ ANTI GROUND SHOOTING: Видеокамера производит запись только тогда, когда Вы держите START/STOP в нажатом состояни, так, что Вы можете избежать записи ненужных сцен.
5SEC: Когда Вы нажимаете START/STOP, видеокамера производит запись в течение 5 секунд, а затем останавливается автоматически.

(2) Нажмите START/STOP. Запись начинается.

Если Вы выбрали **5SEC**, пять точек появляется в видоискателе или на экране ЖКД. Точки исчезают со скоростью по одной за секунду, как показано на рисунке ниже. Когда пять секунд истечет и все точки исчезнут, видеокамера переключается на режим готовности автóматически.

Basic operations Основные операции



To extend the recording time in 5SEC mode

Press START/STOP again before all the dots disappear. Recording continues for about 5 seconds from the moment you press START/STOP.

Notes on 5SEC recording

- When you select ⊥ ANTI GROUND SHOOTING or **5SEC**, you cannot use the fade-in/fade-out function.
- When you select **5SEC**, the remaining tape indicator is not displayed.
- If you have turned off the indicators on the LCD screen, the dots do not appear.

Shooting with the LCD screen

You can also record the picture while looking at the LCD screen.
When using the LCD screen, the viewfinder screen turns off automatically. You cannot monitor the sound from the speaker during CAMERA mode.

(1) Press OPEN and open the LCD panel.
(2) Adjust angle of the LCD panel.
The LCD panel moves about 90 degrees to this side and about 180 degrees to the other side.
To adjust the brightness of the LCD screen, press LCD BRIGHT.
+ side: to brighten the LCD screen
– side: to dim the LCD screen

The battery life is longer when the LCD panel is closed. Use the viewfinder instead of the LCD screen to save the battery power.

Для продления времени записи в режиме 5SEC

Нажмите START/STOP снова до того, как все точки исчезнут. Запись продолжается приблизительно еще в течение 5 секунд с момента нажатия START/STOP.

Примечания к записи 5SEC

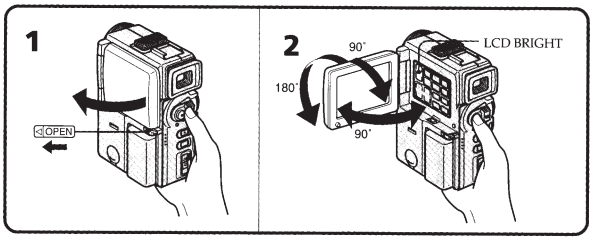
- Если Вы выбираете ⊥ ANTI GROUND SHOOTING или **5SEC**, Вы не сможете использовать функцию введения/выведения изображения.
- Если Вы выбираете **5SEC**, индикатор оставшейся ленты отображаться не будет.
- Если Вы выключили индикаторы на экране ЖКД, точки появляться не будут.

Съемка с использованием экрана ЖКД

Вы можете также производить запись изображения, глядя на экран ЖКД.
При использовании экрана ЖКД экран видоискателя выключается автоматически.
Вы не можете слышать звук от громкоговорителя в режиме CAMERA.

(1) Нажмите OPEN и откройте панель ЖКД.
(2) Отрегулируйте угол панели ЖКД.
Панель ЖКД перемещается приблизительно на 90 градусов в эту сторону и приблизительно на 180 градусов в другую сторону.
Для регулировки яркости экрана ЖКД нажмите LCD BRIGHT.
Сторону +: для получения более яркого экрана ЖКД
Сторону –: Для получения более тусклого экрана ЖКД

Срок службы заряда батарейного блока будет длинее, когда панель ЖКД закрыта. Используйте видоискатель вместо экрана ЖКД для экономии заряда батарейного блока.

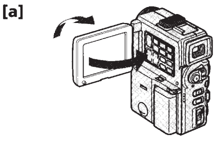


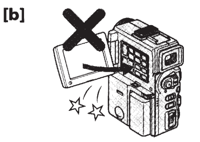
Notes on the LCD panel

- When closing the LCD panel, turn it vertically until it clicks **[a]**.
- When turning the LCD panel, turn it always vertically; otherwise, the camcorder body may be damaged or the LCD panel may not close properly **[b]**.
- Always open the LCD screen up to 90 degrees when adjusting its angle.
- Close the LCD panel completely when not in use.
- Do not push nor touch the LCD when moving the LCD panel.
- You may find it difficult to view the LCD screen due to glare when using the camcorder outdoors.

Примечания к панели ЖКД

- При закрывании панели ЖКД поворачивайте ее вертикально до тех пор, пока она не защелкнется **[a]**.
- При вращении панели ЖКД двигайте ее всегда вертикально; или в противном случае корпус видеокамеры может быть поврежден или панель ЖКД может быть закрыта неправильно **[b]**.
- Всегда открывайте панель ЖКД на 90 градусов при регулировке ее угла.
- Полностью закройте панель ЖКД, когда она не используется.
- Не нажимайте и не трогайте ЖКД при перемещении панели ЖКД.
- Вы можете столкнуться с трудностями при просмотре на экране ЖКД из-за отблеска при использовании видеокамеры на улице.





Letting the subject monitor the shot

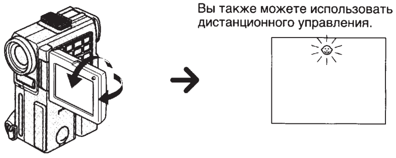
You can turn the LCD panel over so that it faces the other way and you can let the subject monitor the shot while shooting with the viewfinder.

Turn the LCD panel vertically first until it clicks, then turn it over. The ☺ indicator appears on the LCD screen **(mirror mode)** and the time code, tape counter and remaining tape indicators disappear.
You can also use the Remote Commander.

Возможность для снимаемого человека наблюдать съемку

Вы можете перевернуть панель ЖКД, так, что она будет обращена в другую сторону и Вы можете дать возможность снимаемому человеку наблюдать съемку, контролируя запись в видоискателе.

Сперва поворачивайте панель ЖКД, держа ее вертикально, пока она не защелкнется, а затем переверните ее. Индикатор ☺ появится на экране ЖКД **(зеркальный режим)** и индикаторы временного кода, счетчика ленты и оствшейся ленты исчезнут.
Вы также можете использовать пульт дистанционного управления.



To cancel mirror mode
Turn the LCD panel back toward the camcorder body.

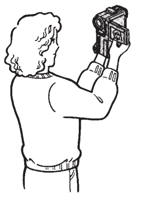
Для отмены зеркального режима
Поверните панель ЖКД назад в направлении корпуса видеокамеры.

Notes on mirror mode

- When you turn the LCD panel 180 degrees, the camcorder enters mirror mode.
- Using the mirror mode, you can record yourself while watching yourself on the LCD screen.
- The picture on the LCD screen looks like a mirror-image while recording in mirror mode. The STBY indicator appears as ▮▮● and REC as ●. Other indicators appear as mirror-image. Some indicators may not appear in mirror mode.
- While recording in mirror mode, you cannot operate the following functions: MENU, TITLE, and ZERO SET MEMORY on the Remote Commander.
- When recording in mirror mode, the picture on the LCD screen rotates right or left as if in a mirror, but the recorded picture on the tape will be the same as the actual subject.

Примечания к зеркальному режиму

- Когда Вы поворачиваете панель ЖКД на 180 градусов, видеокамера входит в зеркальный режим.
- Используя зеркальный режим, Вы можете записать самого себя, наблюдая себя на на экране ЖКД.
- Изображение на экране ЖКД появляется в зеркальном отображении во время записи в зеркальном режиме. Индикатор STBY появляется в виде ▮▮●, а REC в виде ●. Другие индикаторы появляются, как зеркальные отображения. Некоторые индикаторы могут не появляться в зеркальном режиме.
- Во время записи в зеркальном режиме, Вы не можете использовать следующие функции: MENU, TITLE и ZERO SET MEMORY на пульте дистанционного управления.
- При записи в зеркальном режиме изображение на ЖКД поворачивается вправо и влево так же как и в зеркале, но записанное изображение на ленте будет таким же, как и объект в действительности.



Hints for better shooting

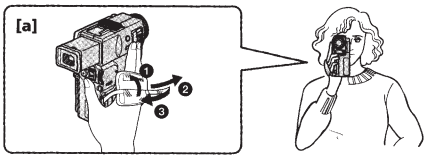
For hand-held shots, you will get better results by holding the camcorder according to the following suggestions:

- Hold the camcorder firmly and secure it with the grip strap so that you can easily manipulate the controls with your thumb. **[a]**

Советы для лучшей съемки

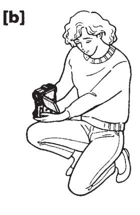
Для кадров при удержании видеокамеры в руках Вы получите лучшие результаты, если будете держать видеокамеру в соответствии со следующими рекомендациями:

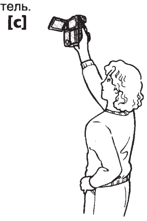
- Держите видеокамеру крепко и закрепите ее с помощью ременного захвата так, чтобы Вы легко могли манипулировать регуляторами с помощью большого пальца. **[a]**



- Place your elbows against your side.
- Adjust the LCD panel angle.
- Keep your fingers away from the lens.
- Place your eye firmly against the viewfinder eyecup.
- Be sure not to touch the built-in microphone.
- Be sure not to touch the FOCUS button by accident.
- Use the LCD panel frame or the viewfinder frame as a guide to determine the horizontal plane.
- You can also record in a low position to get an interesting recording angle. Lift the LCD panel up to record from a low position. **[b]**
- You can also record in a high position. Lift the LCD panel down to record from a high position. **[c]**
- When you use the LCD screen outdoors in direct sunlight, the LCD screen may be difficult to see. If this happens, we recommend that you use the viewfinder.

- Расположите Ваши локти по бокам от себя.
- Отрегулируйте угол панели ЖКД.
- Держите Ваши пальцы подальше от объектива.
- Надежно прижмите Ваш глаз к окуляру видоискателя.
- Ни в коем случае не трогайте встроенный микрофон.
- Будьте осторожны, чтобы случайно не дотронуться до кнопки FOCUS.
- Используйте визирную рамку панели ЖКД или видоискателя в качестве руководства для определения горизонтального плана.
- Вы можете также записывать из низкого положения для получения интересного угла записи. Поверните панель ЖКД вверх для записи из низкого положения. **[b]**
- Вы можете также записывать из высокого положения. Поверните панель ЖКД вниз для записи из высокого положения. **[c]**
- Когда Вы используете экран ЖКД на улице под прямым солнечным светом, то изображение на экране ЖКД может быть трудным для просмотра. Если это случится, то мы рекомендуем Вам использовать видоискатель.





Hints for better shooting

Place the camcorder on a flat surface or use a tripod
Try placing the camcorder on a table top or any other flat surface of suitable height. If you have a tripod for a still camera, you can also use it with the camcorder. When attaching a non-Sony tripod, make sure that the length of the tripod screw is less than 6.5 mm. Otherwise, you cannot attach the tripod securely and the screw may damage the camcorder.

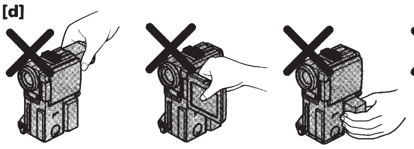
Cautions on the LCD panel and the viewfinder
- Do not pick up the camcorder by the viewfinder, the LCD panel or battery pack **[d]**.
- Do not place the camcorder so as to point the viewfinder or the LCD panel toward the sun. The inside of the viewfinder or the LCD panel may be damaged. Be careful when placing the camcorder under sunlight or by a window **[e]**.
- Do not point the lens toward the sun with a close-up lens attached. Doing so may damage the camcorder.

Советы для лучшей съемки

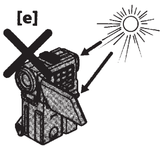
Располагайте видеокамеру на плоской поверхности или используйте треногу
Постарайтесь расположить видеокамеру сверху на столе или любой другой плоской поверхности подходящей высоты. Если у Вас есть тренога для фотоаппарата, Вы также можете использовать ее и для видеокамеры. При прикреплении треноги не фирмы Sony убедитесь, что длина винта треноги менее 6,5 мм. В противном случае Вы не сможете надежно прикрепить треноку, а винт может повредить видеокамеру.

Предосторожности к панели ЖКД и видоискателю
- Не поднимайте видеокамеру за видоискатель, панель ЖКД или батарейныей блок **[d]**.
- Не распологайте видеокамеру так, чтобы объектив или экран ЖКД были направлены в сторону солнца. Внутренние части видоискателя или панели ЖКД могут быть повреждены. Будьте осторожны при расположении видеокамеры под солнцем или возле окна **[e]**.
- Не направляйте обхектив на солнце при прикрепленной насадке для съемки крупным планом. Такое действие может повредить видеокамеру.

[d]



[e]



Checking the recorded picture

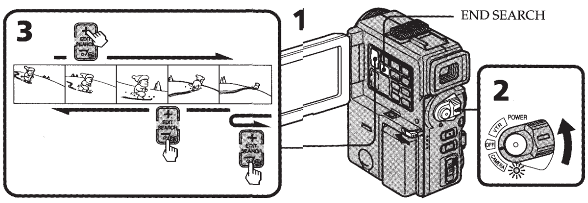
Using EDIT SEARCH, you can review the last recorded scene or check the recorded picture on the LCD screen.

(1) Press OPEN and open the LCD panel.
(2) While pressing the small green button on the POWER switch, set it to CAMERA.
(3) Press the –/⊜ side of EDIT SEARCH momentarily; the last few seconds of the recorded portion play back **(Rec Review)**. Hold down the –/⊜ side of EDIT SEARCH until the camcorder goes back to the scene you want. The last recorded portion is played back. To go forward, hold down the + side **(Edit Search)**.

Проверка записанного изображения

Используя EDIT SEARCH, Вы можете пересмотреть последнюю записанную сцену или проверить записанное изображение на экране ЖКД.

(1) Нажмите OPEN и откройте панель ЖКД.
(2) Нажимая маленькую зеленую кнопку на выключателе POWER, установите его в положение CAMERA.
(3) На мгновение нажмите сторону –/⊜ кнопки EDIT SEARCH; последние несколько секунд записанной части будут воспроизведены **(пересмотр записи)**. Держите нажатой сторону –/⊜ кнопки EDIT SEARCH до тех пор, пока видеокамера не вернется к желаемой сцене. Последняя записанная часть будет воспроизведена. Для продвижения вперед держите нажатой сторону + **(монтажный поиск)**.



To stop playback
Release EDIT SEARCH.

To go back to the last recorded point (END SEARCH)
Press END SEARCH. The last recorded point is played back for about 5 seconds and stops. Note that this function does not work once you eject the tape without cassette memory after you recorded in the tape. If there is a blank portion in the recorded portion, the End Searh may not function correctly.

Note on EDIT SEARCH function
Release EDIT SEARCH once, and press the –/⊜ (or +) side of EDIT SEARCH when changing the playing direction. The direction may not change properly if pressing EDIT SEARCH soon after releasing the button.

Для останова воспроизведения
Отпустите EDIT SEARCH.

Для возвращения к последней записанной точке (END SEARCH)
Нажмите END SEARCH. Воспроизведение последнего записанного места будет выполнено приблизительно в течение 5 секунд и остановлено. Заметьте, что данная функция не работает, если Вы вытолкнете ленту кассеты без памяти после выполнения записи на ленте. Если имеется незаписанный участок в записанной части, поиск конца изображения может не функционировать правильно.

Примечание к функции EDIT SEARCH
Отпустите EDIT SEARCH и нажмите сторону –/⊜ (или +) кнопки EDIT SEARCH для изменения направления воспроизведения. Направление может не измениться надлежащим образом при нажатии EDIT SEARCH сразу после отпускания кнопки.

Playing back a tape

You can monitor the playback picture on the LCD screen or in the viewfinder.

(1) Insert the recorded tape with the window facing out.
(2) Press OPEN and open the LCD panel. Adjust the angle of the LCD panel.
(3) While pressing the small green button on the POWER switch, set it to VTR. The power lamp under the POWER switch lights up.
(4) Press ◀◀ to rewind the tape.
(5) Press ▶ to start playback.
(6) Adjust the volume using VOLUME and the brightness of the LCD screen using LCD BRIGHT.

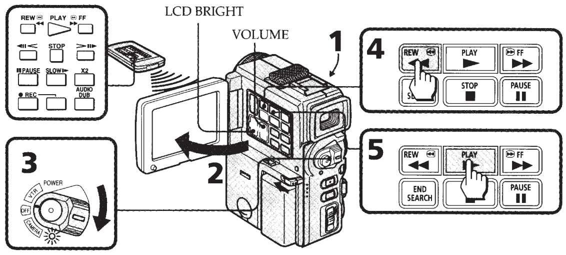
You can also monitor the picture on a TV screen, after connecting the camcorder to a TV or VCR.

Воспроизведение ленты

Вы можете просматривать изображение на экране ЖКД или в видоискателе.

(1) Вставьте записанную ленту с окошком, обращенным наружу.
(2) Нажмите OPEN и откройте панель ЖКД. Отрегулируйте угол панели ЖКД.
(3) Нажимая маленькую зеленую кнопку на выключателе POWER, установите его в положение VTR. Лампочка питания под выключателем POWER будет гореть.
(4) Нажмите ◀◀ для ускоренной перемотки ленты назад.
(5) Нажмите ▶ для начала воспроизведения.
(6) Отрегулируйе громкость с использованием VOLUME и яркость экрана ЖКД с использованием LCD BRIGHT.

Вы можете также просмотреть изображение на экране телевизора после подсоединения видеокамеры к телевизору или КВМ.



To stop playback, press ■.
To rewind the tape, press ◀◀.
To fast-forward the tape rapidly, press ▶▶.

Using the Remote Commander
You can control playback using the supplied Remote Commander. Before using the Remote Commander, insert the R6 (size AA) batteries.

Для останова воспроизведения нажмите ■.
Для ускоренной перемотки ленты назад нажмите ◀◀.
Для ускоренной перемотки ленты вперед нажмите ▶▶.

Использование пульта дистанционного управления
Вы можете управлять воспроизведением с помощью прилагаемого пульта дистанционного управления. Перед использованием пульта дистанционного управления вставьте в него батарейки R6 (размером АА).

To display the LCD screen indicators
Press DISPLAY. (p. 122)
To erase the indicators, press again.

Note on screen indicators
The screen indicators in the viewfinder are always displayed.

Using headphones
Connect headphones (not supplied) to the AUDIO VIDEO OUT/🎧 jack (p. 124). You can adjust the volume of the headphones using VOLUME.

To view the playback picture in the viewfinder
Close the LCD panel and pull out the viewfinder until it clicks. The viewfinder turns on automatically.
When using the viewfinder, you can monitor the sound only by using headphones.
In order to view a picture on the LCD screen again, move the viewfinder back and open the LCD panel. The viewfinder will automatically turn off.

Various playback modes

To view a still picture (playback pause)
Press ▮▮ during playback. To resume playback, press ▮▮ or ▶.

To locate a scene (picture search)
Keep pressing ◀◀ or ▶▶ during playback. To resume normal playback, release the button.

Для отображения экранных индикаторов на ЖКД
Нажмите DISPLAY. (стр. 122)
Для стирания индикаторов нажмите еще раз.

Примечание к экранным индикаторам
Экранные индикаторы всегда отображаются в видоискателе.

Использование головных телефонов
Подсоедините головные телефоны (не прилагаются) к гнезду AUDIO VIDEO OUT/🎧 (стр. 124). Вы сможете регулировать громкость головных телефонов с помощью VOLUME.

Для воспроизведения изображения в видоискателе
Закройте панель ЖКД и вытащите видоискатель, пока он не защелкнется. Видоискатель включится автоматически.
При использовании видоискателя Вы можете слушать звук только с помощью головных телефонов.
Для просмотра на экране ЖКД снова задвиньте видоискатель назад и откройте панель ЖКД. Видоискатель выключится автоматически.

Различные режимы воспроизведения

Для просмотра неподвижного изображения (пауза воспроизведения)
Нажмите ▮▮ во время воспроизведения. Для восстановления воспроизведения нажмите ▮▮ или ▶.

Для обнаружения фрагмента (поиск изображения)
Держите нажатой кнопку ◀◀ или ▶▶ во время воспроизведения. Для восстановления нормального воспроизведения отпустите кнопку.

To monitor the high-speed picture while advancing the tape or rewinding (skip scan)

Keep pressing ◀◀ while rewinding or ▶▶ while advancing the tape. To resume normal rewinding or fast-forward, release the button.

To view the picture at 1/3 speed (slow playback)

Press ❙▶ on the Remote Commander during playback. For slow playback in reverse direction, press <, then press ❙▶. To resume normal playback, press ▶.

To view the picture at double speed

For double speed playback in the reverse direction, press <, then press ×2 on the Remote Commander during playback. For double speed playback in the forward direction, press >, then press ×2 during playback. To resume normal playback, press ▶.

To view the picture frame-by-frame

Press ◀❙❙ or ❙❙▶ on the Remote Commander in playback pause mode. If you keep pressing the button, you can view the picture at 1/25 speed. To resume normal playback, press ▶.

To change the playback direction

Press < on the Remote Commander for reverse direction or > on the Remote Commander for forward direction during playback. Or keep pressing EDIT SEARCH during playback pause mode. To resume normal playback, press ▶.

Для контроля изображения на высокой скорости во время ускоренной перемотки ленты вперед или назад (поиск методом прогона)

Держите нажатой кнопку ◀◀ во время перемотки ленты назад или кнопку ▶▶ во время перемотки ленты вперед. Для восстановления нормальной перемотки назад или вперед отпустите кнопку.

Для просмотра изображения на 1/3 скорости (замедленное воспроизведение)

Нажмите ❙▶ на пульте дистанционного управления во время воспроизведения. Для замедленного воспроизведения в обратном направлении нажмите <, а затем нажмите ❙▶. Для восстановления нормального воспроизведения нажмите ▶.

Для просмотра изображения с удвоенной скоростью

Для удвоения скорости воспроизведения в обратном направлении нажмите <, а затем нажмите ×2 на пульте дистанционного управления во время воспроизведения. Для удвоения скорости воспроизведения в направлении вперед нажмите >, а затем нажмите ×2 во время воспроизведения. Для восстановления нормального воспроизведения нажмите ▶.

Для покадрового просмотра изображения

Нажмите ◀❙❙ или ❙❙▶ на пульте дистанционного управления в режиме паузы воспроизведения. Если Вы будете держать кнопку нажатой, то Вы можете просматривать изображение на 1/25 скорости. Для восстановления нормального воспроизведения нажмите ▶.

Для изменения направления воспроизведения

Нажмите < на пульте дистанционного управления для выбора обратного направления или > на пульте дистанционного управления для выбора направления вперед во время воспроизведения. Или держите EDIT SEARCH в нажатом состоянии в режиме паузы воспроизведения. Для восстановления нормального воспроизведения нажмите ▶.

Notes on playback
- The sound is muted in the various playback modes.
- During playback other than normal playback, the picture recorded or played back last time may appear in mosaic image. This is not malfunction.
- When playback pause mode lasts for 5 minutes, the camcorder automatically enters stop mode. To resume playback, press ▶.

Note on slow playback

The slow playback can be performed smoothly on this camcorder; however, this function does not work for an output signal from the DV IN/OUT jack.

Примечания к воспроизведению
- Звук будет приглушен в различных режимах воспроизведения.
- Во время воспроизведения в режиме,отличном от нормального воспроизведения, изображение, записанное или воспроизведенное в последний раз, может иметь мозаичный вид. Это не является неисправностью.
- Если режим паузы воспроизведения продолжается в течение 5 минут, видеокамера автоматически войдет в режим остановки. Для возобновления воспроизведения нажмите ▶.

Примечание к замедленному воспроизведению

Замедленное воспроизведение может быть плавно выполнено на данной видеокамере; однако данная функция не будет работать при поступлении выходных сигналов от гнезда DV IN/OUT.

Searching for the end of the picture

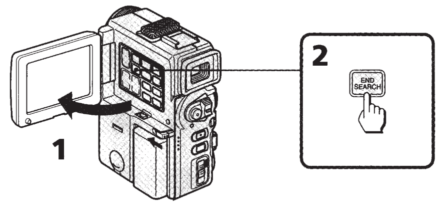
Поиск конца изображения

You can go to the end of the recorded portion after you record and play back the tape. The tape starts rewinding or fast-forwarding and the last about 5 seconds of the recorded portion plays back. Then the tape stops at the end of the recorded picture **(End Search)**.

(1) Press OPEN and open the LCD panel.
(2) Press END SEARCH.
This function works when the POWER switch is set to CAMERA or VTR.

Вы можете перейти к концу записанной части после записи и воспроизведения ленты. Лента начинает перематываться назад или вперед, и последние 5 секунд записанной части будут воспроизведены. Затем лента остановится в конце записанного изображения **(поиск конца)**.

(1) Нажмите OPEN и откройте панель ЖКД.
(2) Нажмите END SEARCH.
Данная функция работает, когда выключатель POWER установлен в положение CAMERA или VTR.



Notes on End Search
- When you use a tape without cassette memory, the End Search function does not work once you eject the cassette after recording. (The End Search function will work when you record again.)
- If there is a blank portion in the recorded portion, the End Search may not function correctly.

Примечания к поиску конца изображения
- Когда Вы используете ленту кассеты без памяти, функция поиска конца не будет работать, если Вы вытолкнете кассету после выполнения записи. (Функция поиска конца изображения будет работать, если Вы снова выполните запись.)
- Если в записанной части имеется незаписанное место, то функция поиска конца может работать неправильно.

Advanced operations

Using alternative power sources

Усовершенствованные операции

Использование альтернативных источников питания

You can choose any of the following power sources for your camcorder: battery pack and mains. Choose the appropriate power source depending on where you want to use your camcorder.

Place	Power source	Accessory to be used
Indoors	Mains	Supplied AC power adaptor
Outdoors	Battery pack	Battery pack NP-F10 (supplied), NP-F20, NP-F30

Note on power sources

Disconnecting the power source or removing the battery pack during recording or playback may damage the inserted tape. If this happens, restore the power supply again immediately.

Using the mains

To use the supplied AC power adaptor:
(1) Connect the supplied connecting cord to the DC OUT jack on the AC power adaptor.
(2) Slide the connecting plate in the direction of the arrow.
(3) Connect the mains lead to the AC power adaptor.
(4) Connect the mains lead to mains.

Вы можете выбрать любой из следующих источников питания для Вашей видеокамеры: батарейный блок и электрическую сеть. Выберите подходящий источник питания в зависимости от того, где Вы хотите использовать Вашу видеокамеру.

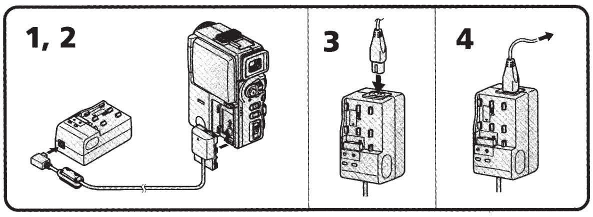
Место	Источник питания	Используемые принадлежности
В помещении	Электрическая сеть	Прилагаемый сетевой адаптер перем. тока
На улице	Батарейный блок	Батарейный блок NP-F10 (прилагается), NP-F20, NP-F30

Примечание по источникам питания

Отсоединение источника питания или снятие батарейного блока во время записи или воспроизведения может повредить вставленную ленту. Если это случится, восстановите источник питания немедленно.

Использование электрической сети

Для использования сетевого адаптера переменного тока:
(1) Подсоедините прилагаемый соединительный шнур к гнезду DC OUT на сетевом адаптере переменного тока.
(2) Передвиньте соединительную пластину в направлении стрелки.
(3) Подсоедините сетевой провод к сетевому адаптеру перем. тока.
(4) Подсоедините сетевой провод к электрической сети.



Using alternative power sources

Использование альтернативных источников питания

To remove the connecting plate
The connecting plate is removed in the same way as the battery pack.

WARNING
The mains lead must only be changed at a qualified service shop.

PRECAUTION
The set is not disconnected from the AC power source (mains) as long as it is connected to the mains, even if the set itself has been turned off.

This mark indicates that this product is a genuine accessory for Sony video product.
When purchasing Sony video products, Sony recommends that you purchase accessories with this "GENUINE VIDEO ACCESSORIES" mark.

Для снятия соединительной пластины
Соединительная пластина снимается также, как и батарейный блок.

ПРЕДУПРЕЖДЕНИЕ
Сетевой провод должен быть заменен только в мастерской квалифицированного обслуживания.

ПРЕДОСТЕРЕЖЕНИЕ
Аппарат не отключается от источника питания перем. тока (электрической сети) до тех пор, пока он подключен к электрической сети, даже если сам аппарат выключен.

Настоящий знак указывает, что данная продукция является подлинной принадлежностью видеопродукции Sony. Если Вы покупаете видеопродукцию Sony, то мы рекомендуем, чтобы Вы покупали принадлежности, помеченные знаком "GENUINE VIDEO ACCESSORIES".

Changing the mode settings

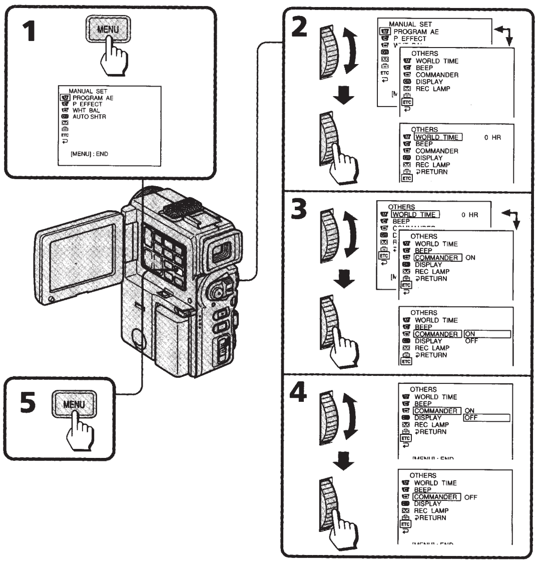
Изменение установок режимов

You can change the mode settings in the menu system to further enjoy the features and functions of the camcorder.

(1) Press MENU to display the menu on the LCD screen.
(2) Turn the control dial to select the desired icon in the left side of the menu, then press the control dial.
(3) Turn the control dial to select the desired item, then press the control dial.
(4) Turn the control dial to select the desired mode, and press the control dial. If you want to change the other modes, repeat steps 3 and 4. If you want to change the other items, select ⮐ RETURN and press the control dial, then repeat steps from 2 to 4.
(5) Press MENU or select ⮐ icon to erase the menu display.

Вы можете изменять установки режимов в системе меню для большего наслаждения особенностями и функциями видеокамеры.

(1) Нажмите MENU для отображения меню на экране ЖКД.
(2) Поверните регулировочный диск для выбора желаемой пиктограммы, а затем нажмите регулировочный диск.
(3) Поверните регулировочный диск для выбора желаемой установки, а затем нажмите регулировочный диск.
(4) Поверните регулировочный диск для выбора желаемого режима, а затем нажмите регулировочный диск. Если Вы хотите изменить другие режимы, повторите пункты 3 и 4. Если Вы хотите изменить другие пункты, выберите ⮐ RETURN и нажмите регулировочный диск, затем повторите пункты со 2 по 4.
(5) Нажмите MENU или выберите пиктограмму ⮐ для стирания дисплея меню.



Changing the mode settings

Изменение установок режимов

Note on mirror mode
While recording in mirror mode, the menu does not appear on the LCD screen or in the viewfinder.

Note on changing the mode settings
Menu items differs depending on the setting of the POWER switch to VTR or CAMERA.

Selecting the mode setting of each item

● is set at factory.

Items for both CAMERA and VTR modes

P EFFECT**
Select this item to enjoy the picture effect. See page 46 for details.

LCD COLOUR
Select this item and change the level of the indicator by turning control dial up or down to adjust the colour intensity of the picture.

VF BRIGHT
Close the LCD panel and pull out the viewfinder. Select this item to adjust the brightness of the viewfinder. The viewfinder becomes brighter when you turn the control dial up, and darker when you turn it down.

TITLEERASE
Erase the title you have superimposed.

TAPE TITLE
Select this item to label the cassette tape. See page 68 for details.

ERASE ALL <RETURN/OK>
- Select RETURN to cancel the erase operation.
- Select OK to erase all data on the cassette memory.

REC MODE <●SP/LP>
- Select SP when recording in SP (standard play) mode.
- Select LP when recording in LP (long play) mode.

Примечание к зеркальному режиму
Во время записи в зеркальном режиме меню не будет появляться на экране ЖКД или в видоискателе.

Примечание к изменению установок режимов
Установки меню изменяются в зависимости от нахождения выключателя POWER в положении VTR или CAMERA.

Выбор режима каждой установки

● Установлено на заводе.

Установки для обоих режимов, CAMERA и VTR

P EFFECT**
Выберите эту позицию для включения функции эффектов изображения. Что касается подробностей, см. стр. 46.

LCD COLOUR
Выберите данную установку и измените уровень индикатора путем поворачивания регулировочного диска вверх или вниз для регулировки яркости цвета изображения.

VF BRIGHT
Закройте панель ЖКД и вытащите видоискатель.
Выберите данную установку для регулироввки яркости видоискателя. Видоискатель станет светлее при повороте регулировочного диска вверх и темнее при повороте диска вниз.

TITLEERASE
Для стирания наложенного Вами титра.

TAPE TITLE
Выберите данную устновку для обозначения кассетной ленты. Подробности см. на стр. 68.

ERASE ALL <RETURN/OK>
- Выберите RETURN для отмены операции стирания.
- Выберите OK для стирания всех данных из памяти кассеты.

REC MODE <●SP/LP>
- Выберите SP при записи в режиме SP (стандартного воспроизведения).
- Выберите LP при записи в режиме LP (удлиненного воспроизведения).

Changing the mode settings

Изменение установок режимов

REMAIN <●AUTO/ON>
- Select AUTO when you want to display the remaining tape indicator
  - for about 8 seconds after the camcorder is turned on and calculates the remainder of the tape.
  - for about 8 seconds after a cassette is inserted and the camcorder calculates the remainder of the tape.
  - for about 8 seconds after ► is pressed in VTR mode.
  - for about 8 seconds after DISPLAY is pressed to display the screen indicator.
  - for the period of tape rewinding, forwarding or picture search in VTR mode.
- Select ON to always display the remaining tape indicator.

LTR SIZE <●NORMAL/2X>
- Normally select NORMAL.
- Select 2X to display selected menu item by twice size of normal.

BEEP <●MELODY/NORMAL/OFF>
- Select MELODY so that melody sounds when you start/stop recording, etc.
- Select NORMAL so that beeps sound when you start/stop recording, etc.
- Select OFF when you do not want to hear the melody and beep sound.

COMMANDER* <●ON/OFF>
- Normally select ON.
- Select OFF when the camcorder responds to signals from other remote commanders.

DISPLAY <●LCD or V-OUT/LCD>
- Normally select LCD.
- Select V-OUT/LCD to display indicator both on the LCD screen and the TV screen.

REMAIN <●AUTO/ON>
- Выберите AUTO, если Вы хотите отобразить индикатор оставшейся ленты
  - приблизительно на 8 секунд после того, как видеокамера будет включена и высчитает остаток ленты.
  - приблизительно на 8 секунд после того, как кассета будет вставлена и видеокамера высчитает остаток ленты.
  - приблизительно на 8 секунд после нажатия кнопки ► в режиме VTR.
  - приблизительно на 8 секунд после нажатия DISPLAY для отображения экранных индикаторов.
  - на период ускоренной перемотки ленты назад, вперед или во время поиска изображения в режиме VTR.
- Выберите ON, чтобы индикатор оставшейся ленты отображался всегда.

LTR SIZE <●NORMAL/2X>
- Обычно выбирайте NORMAL.
- Выберите 2X для отображения выбранной установки меню в двойном размере по сравнению с нормальным.

BEEP <●MELODY/NORMAL/OFF>
- Выберите MELODY так, чтобы мелодия звучала, когда Вы начинаете/останавливаете запись и т.д.
- Выберите NORMAL, чтобы зуммерные сигналы звучали, когда Вы начинаете/останавливаете запись и т.д.
- Выберите OFF, Если Вы не хотите слышать мелодию и зуммерный звуковой сигнал.

COMMANDER* <●ON/OFF>
- Обычно выбирайте ON.
- Выберите OFF, если пульт дистанционного управления не используется.

DISPLAY <●LCD или V-OUT/LCD>
- Обычно выбирайте LCD.
- Выберите V-OUT/LCD для отображения индикаторов и на экране ЖКД и на экране телевизора.

Items for CAMERA mode only

PROGRAM AE*
Select this item to use the PROGRAM AE function. See page 57 for details.

WHT BAL* <●AUTO/HOLD/OUTDOOR/INDOOR>
- Normally select AUTO to adjust the white balance automatically.
- Select HOLD when recording monochromatic subject or background.
- Select OUTDOOR when recording in the outdoor mode.
- Select INDOOR when recording in the indoor mode.

AUTO SHTR <●ON/OFF>
- Normally select ON.
- Select OFF not to use the auto shutter.

This function automatically adjust the exposure time by varying the shutter speed of the electronic shutter speed depending on the quantity of the incident light. This function is useful to prevent optical blurring that may possibly occur in shooting an excessively bright object without any ND filter.

D ZOOM <●ON/OFF>
- Select ON to activate digital zooming.
- Select OFF not to use the digital zoom. The camcorder goes back to 10x optical zoom.

16:9WIDE <●OFF/ON>
Select this item to record a 16:9 wide picture. See page 45 for details.

STEADYSHOT <●ON/OFF>
- Normally select ON.
- Select OFF when you do not have to worry about camera-shake.

AUDIO MODE <●12BIT/16BIT>
- Normally select 12BIT to record two stereo sound.
- Select 16BIT to record the one stereo sound with high quality.
  If you select 16BIT, you cannot add an audio sound.

Установки только для режима CAMERA

PROGRAM AE*
Выберите данную устновку для использования функции PROGRAM AE. См. подробности на стр. 57.

WHT BAL* <●AUTO/HOLD/OUTDOOR/INDOOR>
- Обычно выбирайте AUTO для регулировки баланса белого автоматически.
- Выберите HOLD при записи монохромного объекта или фона.
- Выберите OUTDOOR при записаи в режиме съемки вне помещения.
- Выберите INDOOR при записи в режиме съемки в помещении.

AUTO SHTR <●ON/OFF>
- Обычно выбирайте ON.
- Выберите OFF, чтобы не использовать автоматический затвор.

Данная функция автоматически регулирует время экспозиции путем изменения скорости электронного затвора в зависимости от количества окружающего света. Данная функция является очень полезной для предотвращения оптической размытости, которая может произойти при съемке чрезвычайно яркого объекта без применения какого-нибудь фильтра ND.

D ZOOM <●ON/OFF>
- Выберите ON для активизации цифровой трансфокации.
- Выберите OFF при неиспользовании цифровой трансфокации. Видеокамера возвращается к оптическтй 10-кратной трансфокации.

16:9WIDE <●OFF/ON>
Выберите данную установку для записи изображения в широкоформатном режиме 16:9. См. подробности на стр. 45.

STEADYSHOT <●ON/OFF>
- Обычно выбирайте ON.
- Выбрирайте OFF, когда Вы не беспокоетесь о дрожании камеры.

AUDIO MODE <●12BIT/16BIT>
- Обычно выбирайте 12BIT для записи двойного стереофонического звучания.
- Выберите 16BIT для записи одного стереофонического звучания высокого качества.
  Если Вы выберете 16BIT, Вы не сможете наложить звуковое сопровождение.

CLOCK SET
Select this item to reset the date or time.
See page 92 for details.

DEMO MODE <●STBY/ON or OFF>
- Select STBY/ON to glance over the function of camcorder.
- Select OFF not to display demonstration.

Notes on DEMO MODE
- DEMO MODE is set to STBY (Standby) /ON at the factory and the demonstration starts about 10 minutes after you set the POWER switch to CAMERA without inserting a cassette.
- You cannot select DEMO MODE when a cassette is inserted in the camcorder.
- If you insert a cassette during the demonstration, the demonstration stops. You can start recording as usual. DEMO MODE automatically returns to STBY/ON.

To look at the demonstration at once
Eject the cassette, if inserted. Select STBY/ON of DEMO MODE and erase the menu display.
The demonstration will begin.
When you turn off the camcorder once, DEMO MODE automatically returns to STBY/ON.

WORLD TIME
Select this item to set the clock for a local time by a time difference.

REC LAMP <●ON/OFF>
- Normally select ON.
- Select OFF when you do not want the camera recording/battery lamp at the front of the unit to light up.

When recording a close subject
When REC LAMP is set to ON, the red camera recording lamp on the front of the camcorder may reflect on the subject if it is close. In this case, we recommend you set REC LAMP to OFF.

CLOCK SET
Выберите эту установку для переустановки даты и времени.
Подробности см. на стр. 92.

DEMO MODE <●STBY/ON или OFF>
- Выберит STBY/ON для беглого обзора функций видеокамеры.
- Выберите OFF, чтобы деменстрация не отображалась.

Примечания к DEMO MODE
- DEMO MODE устанавливается на заводе на STBY (готовность) /ON и демонстрация начинается приблизительно через 10 минут после установки выключателя POWER в положение CAMERA без вставки кассеты.
- Вы не можете выбрать DEMO MODE, если кассета вставлена в видеокамеру.
- Если Вы вставите кассету во время демонстрации, то демонстрация прекращается. Вы можете начать запись, как обычно. DEMO MODE автоматически возвращается к STBY/ON.

Для безотлагательного просмотра демонстрации
Вытолкните кассету, если она вставлена. Выберите STBY/ON в установке DEMO MODE и сотрите дисплей меню.
Начинается демонстрация.
Когды Вы выключите видеокамеру, DEMO MODE автоматически возвращается к STBY/ON.

WORLD TIME
Выберите данную функцию для установки часов на местное время с помощью разницы во времени.

REC LAMP <●ON/OFF>
- Обычно выбирайте ON.
- Выберите OFF, если Вы не хотите, чтобы загоралась лампочка записи камерой/батареи на передней панели аппарата.

При записи близко расположенного объекта
Когда установка REC LAMP установлена на ON, красная лампочка записи камерой на передней стороне видеокамеры может отражаться на близко расположенном объекте. В таком случае мы рекомендуем Вам установить REC LAMP на OFF.

Items for VTR mode only

HiFi SOUND* <●STEREO/1/2>
- Select STEREO to play back stereo sound or main and sub sound (for dual sound).
- Select 1 to play back the left sound (for stereo sound) or main sound (for dual sound).
- Select 2 to play back the right sound (for stereo sound) or sub sound (for dual sound).

AUDIO MIX*
Select this item and adjust the balance between the stereo 1 and stereo 2 by turning the control dial.

Note on AUDIO MIX
When playing back a tape recorded in the 16BIT mode, you cannot adjust the balance in AUDIO MIX.

NTSC PB <ON PAL TV/NTSC 4.43>
- Normally select ON PAL TV.
- Select NTSC 4.43 if your TV has the NTSC 4.43 mode when playing back a tape recorded in the NTSC colour system.
  When you play back on a Multi System TV, select the best mode while watching the picture on the TV.

CM SEARCH <●ON/OFF>
- Select ON to search using cassette memory.
- Select OFF to search without using cassette memory.

TITLE DISP <●ON/OFF>
- Select ON to display the title you have chosen.
- Select OFF not to display the title.

DATA CODE <●DATE/CAM or DATE>
- Select DATE/CAM to display date and recording data during playback.
- Select DATE to display date during playback.

* These settings return to the default 5 minutes or more after the power source is disconnected or battery is removed. As far as the items without an asterisk are concerned, their settings are retained even when the power source is disconnected or battery is removed, as long as the lithium battery is charged.

** P EFFECT setting returns to OFF when the power is turned off.

Установки только для режима VTR

HiFi SOUND* <●STEREO/1/2>
- Выберите установку STEREO для воспроизведения стереофонического звука или основного и вспомогательного звука (для двойного звука).
- Выберите установку 1 для воспроизведения звука левого канала (для стереофонического звука) или звука основного канала (для двойного звука).
- Выберите установку 2 для воспроизведения звука правого канала (для стереофонического звука) или звука вспомогательного канала (для двойного звука).

AUDIO MIX*
Выберите данную установку и отрегулируйте баланс между стерео 1 и стерео 2 с использованием регулировочного диска.

Примечание к AUDIO MIX
Когда воспроизводится лента, записанная в режиме 16BIT, Вы не можете отрегулировать баланс для AUDIO MIX.

NTSC PB <ON PAL TV/NTSC 4.43>
- Обычно выбирайте ON PAL TV.
- Выберите NTSC 4.43, если Ваш телевизор имеет режим NTSC 4.43 при воспроизведении ленты, записанной в системе цветного телевидения NTSC.
  При воспроизведении на мультисистемном телевизоре выберите наилучший режим, просматривая изображение на экране телевизора.

CM SEARCH <●ON/OFF>
- Выберите ON для поиска с помощью памяти кассеты.
- Выберите OFF для поиска без помощи памяти кассеты.

TITLE DISP <●ON/OFF>
- Выберите ON для отображения выбранного Вами титра.
- Выберите OFF, чтобы титр не отображался.

DATA CODE <●DATE/CAM или DATE>
- Выберите DATE/CAM для отображения даты и данных записи во время воспроизведения.
- Выберите DATE для отображения даты во время воспроизведения.

* Эти установки возвращаются к исходным через 5 минут или более после отсоединения источника питания или снятия батарейного блока. Что касается устновок без звездочки, то они сохраняются даже при отсоединении источника питания или снятии батарейного блока до тех пор, пока заряжена литиевая батарейка.

** Установка P EFFECT возвращается к OFF при выключении питания.

Photo recording

You can record a still picture like a photograph for about seven seconds. This mode is useful when you want to enjoy a picture such as a photograph or when you print a picture using a video printer (not supplied). You can record about 510 pictures in SP mode on a 60-minute tape.

(1) While pressing the small green button on the POWER switch, set it to CAMERA.

(2) Keep pressing PHOTO lightly until a still picture and "CAPTURE" appear on the LCD screen or in the viewfinder.
Recording does not start yet. To change the still picture, release PHOTO, select still picture again, and keep pressing PHOTO lightly again.

(3) Press PHOTO deeper.
The still picture on the LCD screen or in the viewfinder is recorded for about seven seconds. The sound during those seven seconds is also recorded. You cannot change the POWER switch or press PHOTO during recording.

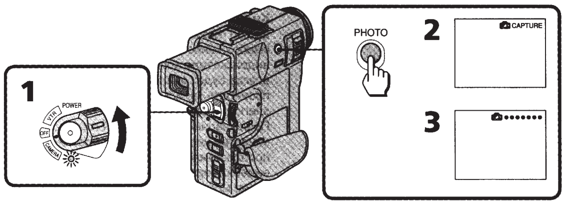
Запись фотографий

Вы можете записывать неподвижное изображение, как фотографию, приблизительно в течение семи секунд. Этот режим является очень полезным, когда Вы хотите наслаждаться изображением похожим на фотографию, или когда Вы делаете распечатку изображений, используя видеопринтер (не прилагается). Вы можете ззаписать приблизительно 510 изображений в режиме SP с использованием 60-минутной ленты.

(1) Нажимая маленькую зеленую кнопку на выключателе POWER, установите его в положение CAMERA.

(2) Придерживайте слекга нажатой кнопку PHOTO до тех пор, пока неподвижное изображение и "CAPTURE" не появятся на экране ЖКД или в видоискателе.
Запись еще не начинается. Для изменения неподвижного изображения отпустите PHOTO, выберите другое неподвижное изображение и снова придерживайте слегка нажатой кнопку PHOTO.

(3) Нажмите PHOTO глубже.
Неподвижное изображение на экране ЖКД или в видоискателе будет записываться приблизительно в течение семи секунд. Звук в течение этих семи секунд также будет записываться. Вы не можете изменить установку выключателя POWER или нажать кнопку PHOTO во время записи.



When shooting in the dark
Install the video flash (not supplied) to the accessory shoe. If the exposure is in manual mode, we recomend you to set it to automatic exposure mode.
When ⚡ appears on the LCD screen or in the viewfinder, the video flash is ready to be used.
When installing the video flash, the noise may be recorded or the sound quality may change. In this case, use the accessory shoe adaptor (not supplied).

Note on using the Remote Commander
If you press the PHOTO button on the Remote Commander when a picture appears on the LCD screen or in the viewfinder, the camcorder will record that picture immediately. You cannot change the picture by using this button.

Note on the still picture
When a moving picture is recorded in the PHOTO mode, the picture may be blurred if it is played back on another VCR. This is not a malfunction.

When you press PHOTO deeply during normal recording
The picture on the LCD screen or in the viewfinder whenever you press PHOTO will be recorded. You cannot check the recorded picture by pressing PHOTO lightly.
After the moving picture is recorded as a still picture for about seven seconds, the camcorder will go back to Standby mode. You cannot change the POWER switch or press PHOTO during recording.

При съемке в темных условиях
Установите лампу-вспышку (не прилагается) на башмак для вспомогательного оборудования. Если экспозиция находится в ручном режиме, установите ее на атоматический режим экспозиции.
Когда ⚡ появляется на экране ЖКД или в видоискателе, лампа-вспышка будет готова к работе.
При установленной лампе-вспышке может происходить запись помех, или качество звука может измениться. В таком случае используйте адаптер башмака для вспомогательного оборудования (не прилагается).

Примечание к использованию пульта дистанционного управления
Если Вы нажимаете кнопку PHOTO на пульте дистанционного управления, когда изображение появляется на экране ЖКД или в видоискателе, видеокамера запишет это неподвижное изображение немедленно. Вы не можете изменить изображение путем использования данной кнопки.

Примечание к неподвижному изображению
Когда движущееся изображение записывается в режиме PHOTO, изображение может выглядеть размытым, если оно воспроизводится на другом KBM. Это не является неисправностью.

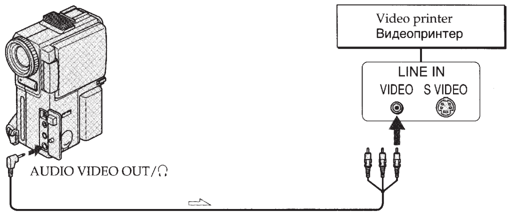
Когда Вы нажимаете PHOTO до конца во время нормальной записи
Изображение на экране ЖКД или в видоискателе когда Вы нажимаете PHOTO всегда будет записываться. Вы не можете проверить записываемое изображение, слегка нажав кнопку PHOTO.
После записи движущегося изображения в качестве неподвижного изображени приблизительно в течение семи секунд, видеокамера вернется в режим готовности. Вы не можете изменить положение выключателя POWER или нажать PHOTO во время записи.

Printing the still picture

You can print a still picture by using the video printer (not supplied). Connect the video printer using the supplied A/V connecting cable. Connect it to the AUDIO VIDEO OUT/🎧 jack and connect the yellow plug of the cable to the video input of the video printer. Refer to the operating instructions of the video printer as well.

Распечатка неподвижного изображения

Вы можете напечатать неподвижное изображение с использованием видеопринтера (не прилагается). Подсоедините видеопринтер с использованием прилагаемого соединительного кабеля аудио/видео. Подсоедините его к гнезду AUDIO VIDEO OUT/🎧 и подсоедините желтый разъем кабеля к видеовходу видеопринтера. Смотрите также инструкцию по эксплуатации видеопринтера.



Signal flow/ Передача сигнала

If the video printer is equipped with S video input
Use the S video connecting cable (not supplied). Connect it to the S VIDEO OUT jack and the S video input of the video printer.

Если видеопринтер оснащен входом S-видео
Используйте соединительный кабель S-видео (не прилагается). Подсоедините его к гнезду S VIDEO OUT и входу S-видео видеопринтера.

Using the FADER function

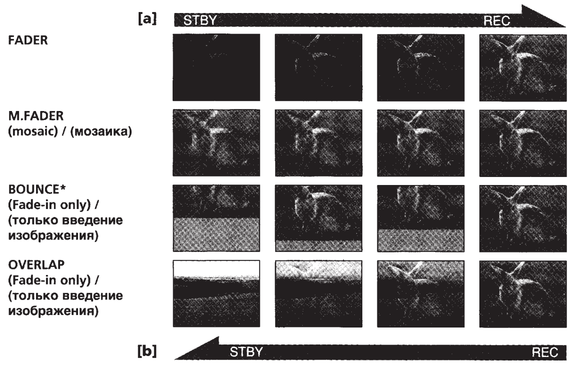
Использование фунции FADER

Selecting the fader function

You can fade in or out to give your recording a professional appearance.
When the picture fades in, the sound gradually increases. When the picture fades out, the sound gradually decreases.

Выбор функции введения/выведения изображения

Вы можете плавно вводить или выводить изображение, придавая Вашей записи профессиональный вид.
Если изображение постепенно вводится, звук постепенно увеличивается. Если изображение постепенно выводится, звук постепенно уменьшается.



MONOTONE
When fading in, the picture gradually changes from black and while to colour.
When fading out, the picture gradually changes from colour to black and white.

* When D ZOOM in the menu system is set to ON, you cannot use this funcion.

MONOTONE
При введении изображение постепенно изменяется от черно-белого до цветного.
При выведении изображение постепенно изменяется от цветного до черно-белого.

* Когда функция D ZOOM в системе меню установлена на ON, Вы не сможете использовать данную функцию.

Using the fader function

When fading in [a]

(1) While the camcorder is in Standby mode, press FADER until the desired indicator flashes.
(2) Press START/STOP to start recording. The fade indicator stops flashing.

When fading out [b]

(1) During recording, press FADER until the desired indicator flashes.
(2) Press START/STOP to stop recording. The fade indicator stops flashing, and then recording stops.

The fading mode selected last is indicated first of all.

Использование функции введения/выведения изображения

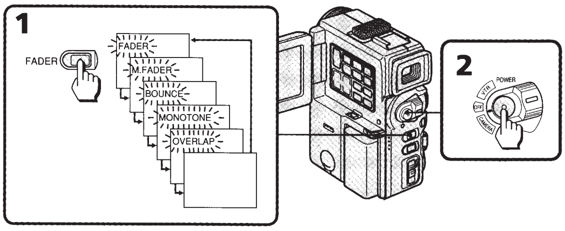
Для введения изображения [a]

(1) Когда видеокамера находится в режиме готовности нажмите FADER, пока желаемый индикатор не начнет мигать.
(2) Нажмите START/STOP для начала записи. Индикатор введения перестает мигать.

Для выведения изображения [b]

(1) Во время записи нажмите FADER, пока желаемый индикатор не начнет мигать.
(2) Нажмите START/STOP для останова записи. Индикатор введения перестает мигать, а затем запись останавливается.

Режим введения/выведения изображения, выбранный последним, указывается первым из всех.



When you use the bounce function
Set D ZOOM to OFF in the menu system.

Note on the bounce function
When you use the following functions, "BOUNCE" indicator does not appear.
- Wide mode
- Picture effect mode
- PROGRAM AE mode

Когда Вы используете функцию изменения размера изображения
Установите D ZOOM на OFF в системе меню.

Примечания к функции изменения размера изображения
Когда Вы используете следующие функции, индикатор "BOUNCE" появляться не будет.
- Широкоформатный режим
- Режим эффектов изображений
- Режим PROGRAM AE

Using the FADER function

To cancel the fader function
Before pressing START/STOP, press FADER until the indicator disappears.

Notes on the fader function
- While using the bounce function, you cannot use the following functions.
  - Exposure
  - Focus
  - Zoom
- You cannot use the fader function in the following situations
  - The START/STOP MODE switch is set to ⊥ ANTI GROUND SHOOTING or **5SEC**
  - The menu is displayed in the viewfinder or on the LCD screen.
- You cannot use the following functions while using the fader function. Also, while using the following functions you cannot use the fader function.
  - Functions using the DIGITAL EFFECT button
  - Low Lux mode of PROGRAM AE (overlap function only)
  - Photo recording
- If you do not record anything before operating the overlap function, the camcorder memorizes the image on the tape. As the image is being memorized, the OVERLAP indicator flashes quickly. Depending on the tape condition, the picture may not be recorded clearly.

Использование фунции FADER

Для отмены функции введения/выведения изображения
Перед нажатием START/STOP нажимайте FADER до тех пор, пока индикатор не исчезнет.

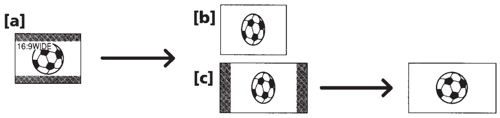
Примечания к функции введения/выведения изображения
- Во время использования функции изменения размеров изображения Вы не можете использовать следующие фчнкции.
  - Экспозиция
  - Фокусировка
  - Трансфокация
- Вы не можете использовать функцию введения/выведения изображения в следующих ситуациях
  - Переключатель START/STOP MODE установлен в положение ⊥ ANTI GROUND SHOOTING или **5SEC**.
  - Меню отображено в видоискателе или на экране ЖКД.
- Вы не можете использовать следующие функции во время использования функции введения/выведения изображения. Также во время использования следующих функций Вы не можете использовать функцию введения/выведения изображения.
  - Функции с использованием кнопки DIGITAL EFFECT
  - Режим низкого освещения функции PROGRAM AE (только функция наложения)
  - Запись фотографий
- Если Вы ничего не записываете перед тем, как использовать функцию наложения, видеокамера запоминает изображение на ленте. Когда изображение будет запомнено, индикатор OVERLAP будет мигать быстро. В зависимости от состояния ленты изображение может быть записано не четко.

Using the wide mode function

You can record a 16:9 wide picture to watch on the 16:9 wide-screen TV (16:9 WIDE).
The picture with black bands at the top and the bottom on the LCD screen or in the viewfinder **[a]** is normal. The picture on a normal TV **[b]** is horizontally compressed. You can watch the picture of normal images on a wide-screen TV **[c]**.

Использование функции широкоформатного режима

Вы можете записывать широкоформатное изображение 16:9 для просмотра на широкоэкранном телевизоре 16:9 (16:9 WIDE).
Изображение с черными полосами вверху и внизу экрана ЖКД или видоискателя **[a]** является нормальным. Изображение на обычном телевизоре будет сжато по горизонтали **[b]**. Вы можете просмотреть нормальное изображение на широкоэкранном телевизоре **[c]**.



Using the wide mode function

Set 16:9WIDE in the menu system to ON (p. 33).

To cancel wide mode
Select OFF in the menu system.

To watch the tape recorded in wide mode
To watch the tape recorded in wide mode, set the TV to full mode. For details, refer to the operating instructions of your TV.
Note that the picture recorded in wide mode looks compressed on a normal TV.

Notes on wide mode
- You cannot select or cancel the wide mode during recording.
- In wide mode, you cannot select the old movie function with DIGITAL EFFECT and the bounce function with FADER.

Использование функции широкоформатного режима

Установите функцию 16:9WIDE в системе меню на ON (стр. 33).

Для отмены широкоформатного режима
Выберите OFF в системе меню.

Для просмотра ленты, записанной в широкоформатном режиме
Для просмотра ленты, записанной в широкоформатном режиме, установите телевизор на полноэкранный режим. Подробности смотрите в инструкции по эксплуатации Вашего телевизора.
Заметьте, что изображение, записанное в широкоформатном режиме, выглядит сжатым на обычном телевизоре.

Примечания к широкоформатному режиму
- Вы не можете выбрать или отменить широкоформатный режим во время записи.
- В широкоформатном режиме Вы не можете выбирать функцию старинного фильма с помощью DIGITAL EFFECT и функцию изменения размера изображения с помощью FADER.

Enjoying picture effect

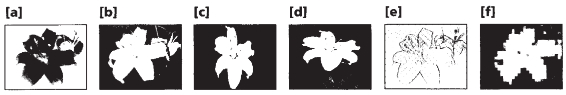
Selecting picture effect

The Picture Effect function allows you to make pictures like those on television. You can also see pictures while using this function during playback.

Наслаждение эффектами изображений

Выбор эффекта изображения

Функция эффектов изображений позволяет Вам сделать изображения как те, что показывают по телевизору. Вы можете также просматривать изображения, используя эту функцию во время воспроизведения.



NEG. ART [a]*
The colour of the picture is reversed.

SEPIA*
The picture is sepia.

B&W*
The picture is monochrome (black and white).

SOLARIZE [b]*
The light intensity is clearer, and the picture looks like an illustration.

SLIM [c]
The picture expands vertically.

STRETCH [d]
The picture expands horizontally.

PASTEL [e]
The picture is in pastel tones.

MOSAIC [f]
The picture is mosaic.

* These functions can be used during playback.

Using picture effect function

Select the desired picture effect mode in the menu system (p. 33).

To return to normal mode
Select OFF in the menu system.

Notes on the picture effect
- When you turn the power off, the camcorder returns automatically to normal mode (OFF).
- While using the picture effect function, you cannot select the old movie function with DIGITAL EFFECT.

When using the picture effect during recording
The effects will be also recorded on the tape.

NEG. ART [a]*
Цвет изображения будет негативным.

SEPIA*
Изображение будет в цвете сепия.

B&W*
Изображение будет монохроматическим (черно-белым).

SOLARIZE [b]*
Яркость света будет более ясной, и изображение будет выглядеть, как иллюстрация.

SLIM [c]
Изображение расширяется по вертикали.

STRETCH [d]
Изображение расширяется по горизонтали.

PASTEL [e]
Изображение будет в пастельных тонах.

MOSAIC [f]
Изображение будет мозаичным.

* Данные функции могут быть использованы во время воспроизведения.

Использование функции эффектов изображения

Выберите желаемый эффект изображения в системе меню (стр. 33).

Для возврата к нормальному режиму
Выберите OFF в системе меню.

Примечания к эффектам изображения
- Когда Вы выключаете питание, видеокамера автоматически возвращается к нормальному режиму (OFF).
- Во время использования функции эффектов изображений Вы не можете выбрать функцию старинного фильма с помощью DIGITAL EFFECT.

При использовании эффектов изображения во время записи
Эффекты также будут записываться на ленте.

Superimposing a still picture on a moving picture

Using the still function, you can record a still picture to be superimposed on a moving picture. The sound is recorded normally.

(1) While the camcorder is in Standby mode or recording mode, press DIGITAL EFFECT and turn the control dial until the STILL indicator flashes.

(2) Press the control dial.
The STILL indicator lights up and the still bars appear. The still picture is stored in memory.

(3) Turn the control dial to adjust the rate of the still picture you want to superimpose on the moving picture. The rate of the still picture increases with the number of the still bars.

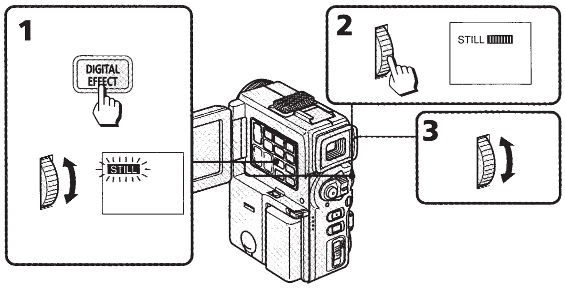
Наложение неподвижного изображения на движущееся изображение

Используя функцию стоп-кадра, Вы можете записать неподвижное изображение, наложив его на движущееся изображение. Звук записывается нормально.

(1) Когда видеокамера находится в режиме готовности или записи нажмите DIGITAL EFFECT и поворачивайте регулировочный диск до тех пор, пока индикатор STILL не будет мигать.

(2) Нажмите регулировочный диск.
Индикатор STILL будет гореть и появляются полосы шкалы стоп-кадра. Неподвижное изображение будет сохранено в памяти.

(3) Поверните регулировочный диск для регулировки частоты кадров неподвижного изображения, которое Вы хотите наложить на движущееся изображение. Частота кадров неподвижного изображения увеличивается вместе с числом полос на шкале стоп-кадра.



To cancel the still function
Press DIGITAL EFFECT.

Notes on the still function
- You cannot use the following functions while recording a still picture.
  - Functions using the FADER button
  - Low Lux mode of PROGRAM AE
  - Functions using the PHOTO button
- When you set the POWER switch to OFF, the still function will be cancelled automatically.

Для отмены функции стоп-кадра
Нажмите DIGITAL EFFECT.

Примечания к функции стоп-кадра
- Вы не можете использовать следующие функции во время записи неподвижного изображения.
  - Функции с использованием кнопки FADER
  - Режим низкой освещенности функции PROGRAM AE
  - Функции с использованием кнопки PHOTO
- Когда Вы установите выключатель POWER в положение OFF, функция стоп-кадра будет отменена автоматически.

Recording still pictures successively

Последовательная запись неподвижных изображений

Using the flash motion function, you can record still pictures successively at constant intervals. The sound is recorded normally.

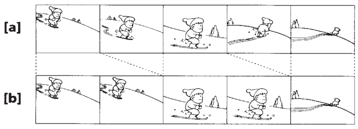
(1) While the camcorder is in Standby mode or recording mode, press DIGITAL EFFECT and turn the control dial until the FLASH indicator flashes.
(2) Press the control dial.
The FLASH indicator lights up and the flash motion bars appear.
(3) Turn the control dial to adjust the interval of flash motion. The intervals increase with the number of the flash motion bars.

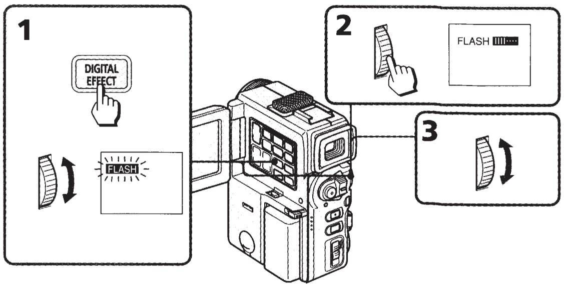
[a] normal recording
[b] flash motion recording

Используя функцию периодического движения, Вы можете последовательно записывать неподвижные изображения с постоянными интервалами. Звук будет записываться нормально.

(1) Когда видеокамера будет находиться в режиме готовности или записи, нажмите DIGITAL EFFECT и поворачивайте регулировочный диск до тех пор, пока индикатор FLASH не начнет мигать.
(2) Нажмите регулировочный диск.
Индикатор FLASH будет гореть, и появляются полосы шкалы периодического движения.
(3) Поверните регулировочный диск для регулировки интервала периодического движения. Интервал увеличивается вместе с числом полос на шкале периодического движения.

[a] Нормальная запись
[b] Периодическая запись





Recording still pictures successively

Последовательная запись неподвижных изображений

To cancel the flash motion function

Press DIGITAL EFFECT.

Notes on the flash motion function

- You cannot use the following functions during the flash motion recording.
  - Functions using the FADER button
  - Low Lux mode of PROGRAM AE
  - Functions using the PHOTO button
- When you set the POWER switch to OFF, the flash motion function will be cancelled automatically.

Для отмены функции периодического движения

Нажмите DIGITAL EFFECT.

Примечания к функции периодического движения

- Вы не можете использовать следующие функции во время записи периодического движения.
  - Функции с использованием кнопки FADER
  - Режим низкой освещенности функции PROGRAM AE
  - Функции с использованием кнопки PHOTO
- Когда Вы установите выключатель POWER в положение OFF, функция периодического движения будет отменена автоматически.

Replacing a brighter portion of a still picture with a moving picture

Замещение более яркой части неподвижного изображения движущимся изображением

Using the luminancekey function, you can replace a brighter portion of a still picture with a moving picture.
For example, you can superimpose the favourite scene on the background if you store the picture in memory as a still picture, such as a person in a bright background. The sound is recorded normally.

Используя функцию замещения яркого изображения переднего плана, Вы можете заместить часть неподвижного изображения с более яркими цветами движущимся изображением.
Например, Вы можете наложить желаемую сцену на фоновый план, если Вы сохранили изображение в памяти в качестве неподвижного изображения, как например, человек на ярком фоне. Звук записывается нормально.

Replacing a brighter portion of a still picture with a moving picture

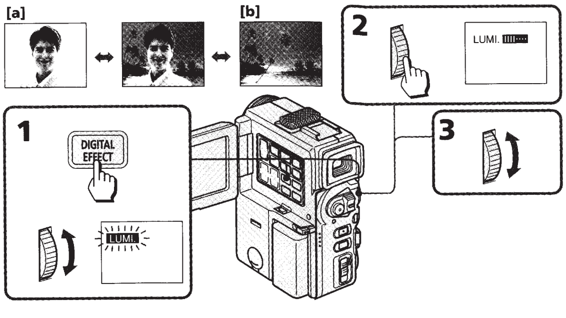
Замещение более яркой части неподвижного изображения движущимся изображением

(1) While the camcorder is in Standby mode or recording mode, press DIGITAL EFFECT and turn the control dial until the LUMI. indicator flashes.
(2) Press the control dial.
The LUMI. indicator lights up and the luminancekey bars appear. The still picture is stored in memory.
(3) Turn the control dial to adjust the colour scheme of the still picture. The rate of the still picture increases by the number of the luminancekey bars.

[a] still picture
[b] moving picture

(1) Когда видеокамера будет находиться в режиме готовности или в режиме записи, нажмите DIGITAL EFFECT и поворачивайте регулировочный диск до тех пор, пока индикатор LUMI. не будет мигать.
(2) Нажмите регулировочный диск.
Индикатор LUMI. будет гореть, и появляются полосы шкалы замещения яркого изображения переднего плана. Неподвижное изображение будет сохранено в памяти.
(3) Поверните регулировочный диск для регулировки цветового плана неподвижного изображения. Частота кадров неподвижного изображения увеличивается вместе с числом полос на шкале замещения яркого изображения переднего плана.

[a] Неподвижное изображение
[b] Движущееся изображение



To cancel the luminancekey function

Press DIGITAL EFFECT.

Notes on the luminancekey function

- The following functions do not work during luminancekey mode.
  - Functions using the FADER button
  - Low Lux mode of PROGRAM AE
  - Functions using the PHOTO button
- When you set the POWER switch to OFF, the luminancekey function will be cancelled automatically.

Для отмены функции замещения яркого изображения переднего плана

Нажмите DIGITAL EFFECT.

Примечания к функции замещения яркого изображения переднего плана

- Следующие функции не работают во время режима замещения яркого изображения переднего плана
  - Функции с использованием кнопки FADER
  - Режим низкой освещенности функции PROGRAM AE
  - Функции с использованием кнопки PHOTO
- Когда Вы установите выключатель POWER в положение OFF, функция замещения яркого изображения переднего плана будет отменена автоматически.

Adding an incidental image to pictures

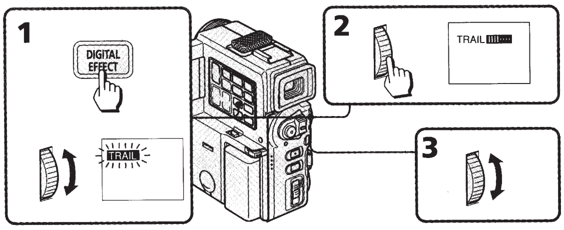
Добавление побочного изображения к основному

Using the trail function, you can record the picture which leaves an incidental image, such as a trail. The sound is recorded normally. You can adjust the vanishing time of the incidental image with the control dial.

(1) While the camcorder is in Standby mode or recording mode, press DIGITAL EFFECT and turn the control dial until the TRAIL indicator flashes.
(2) Press the control dial.
The TRAIL indicator lights up and the trail bars appear.
(3) Turn the control dial to adjust the vanishing time of the incidental image.
The vanishing time increases with the number of the trail bars.

Используя функцию запаздывания изображения, Вы можете записать изображение, которое остается в качестве побочного изображения, как, например, след. Звук записывается нормально. Вы можете отрегулировать время исчезновения побочного изображения с помощью регулировочного диска.

(1) Когда видеокамера будет находиться в режиме готовности или в режиме записи, нажмите DIGITAL EFFECT и поворачивайте регулировочный до тех пор, пока индикатор TRAIL не будет мигать.
(2) Нажмите регулировочный диск.
Индикатор TRAIL будет гореть, и появляются полосы шкалы следа.
(3) Поверните регулировочный диск для регулировки времени исчезновения побочного изображения.
Время исчезновения увеличивается вместе с числом полос шкалы следа.



To cancel the trail function

Press DIGITAL EFFECT.

Notes on the trail function

- The following functions do not work during trail mode.
  - Functions using the FADER button
  - Low Lux mode of PROGRAM AE
  - Functions using the PHOTO button
- When you set the POWER switch to OFF, the trail function will be cancelled automatically.

Для отмены функции запаздывания изображения

Нажмите DIGITAL EFFECT.

Примечания к функции запаздывания изображения

- Следующие функции не работают во время режима запаздывания изображения.
  - Функции с использованием кнопки FADER
  - Режим низкой освещенности функции PROGRAM AE
  - Функции с использованием кнопки PHOTO
- Когда Вы установите выключатель POWER в положение OFF, функция запаздывания изображения будет отменена автоматически.

Using slow shutter

If you want to record a dark picture more brightly, or make the movement of the subject seem lively, set the shutter speed to 1/25, 1/12, 1/6 or 1/3 (slow shutter).

(1) While the camcorder is in Standby mode or recording mode, press DIGITAL EFFECT and turn the control dial until the SLOW SHTR (shutter) indicator flashes.

(2) Press the control dial.
The SLOW SHTR indicator lights up and the shutter speed number (1 - 4) appears.

(3) Turn the control dial to select the shutter speed.
As the shutter speed number becomes bigger, the shutter speed becomes slower.

Shutter speed number	Shutter speed
SLOW SHTR 1	1/25
SLOW SHTR 2	1/12
SLOW SHTR 3	1/6
SLOW SHTR 4	1/3

Использование медленного затвора

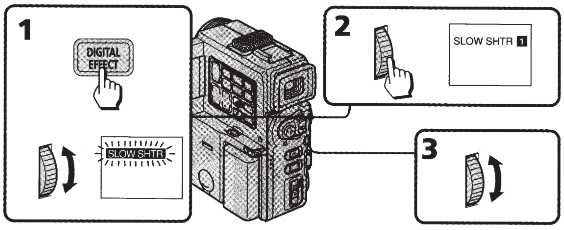
Если Вы хотите записать темное изображение более ярким или сделать движения объекта похожими на реальную жизнь, установите скорость затвора на 1/25, 1/12, 1/6 или 1/3 (медленный затвор).

(1) Когда видеокамера будет находиться в режиме готовности или в режиме записи, нажмите DIGITAL EFFECT и поворачивайте регулировочный диск до тех пор, пока индикатор SLOW SHTR (затвор) не будет мигать.

(2) Нажмите регулировочный диск.
Индикатор SLOW SHTR будет гореть, и появляется номер скорости затвора (1 – 4).

(3) Поверните регулировочный диск для выбора скорости затвора.
Чем больше номер скорости затвора, тем скорость затвора медленнее.

Номер скорости затвора	Скорость затвора
SLOW SHTR 1	1/25
SLOW SHTR 2	1/12
SLOW SHTR 3	1/6
SLOW SHTR 4	1/3



To cancel the slow shutter function

Press DIGITAL EFFECT.

When recording with the slow shutter function

Auto focus may not be effective. Focus manually using a tripod.

Notes on the slow shutter function

- You cannot use the following functions during recording with the slow shutter function.
  - Functions using the FADER button
  - PROGRAM AE mode
  - Functions using the PHOTO button
- When you set the POWER switch to OFF, the slow shutter function will be cancelled automatically.

Для отмены функции медленного затвора

Нажмите DIGITAL EFFECT.

При записи с использованием функции медленного затвора

Автоматическая фокусиросвка может быть неэффективной. Выполняйте ручную фокусировку с использованием треноги.

Примечания к функции медленного затвора

- Вы не можете использовать следующие функции во время записи с использованием функции медленного затвора.
  - Функции с использованием кнопки FADER
  - Режим PROGRAM AE
  - Функции с использованием кнопки PHOTO
- Когда Вы установите выключатель POWER в положение OFF, функция медленного затвора будет отменена автоматически.

Adding an old movie type atmosphere to pictures

Using the old movie function, you can record the picture such as an old movie. The camcorder automatically sets the wide mode to ON, picture effect to SEPIA, and the appropriate shutter speed.

(1) While the camcorder is in Standby mode or recording mode, press DIGITAL EFFECT and turn the control dial until the OLD MOVIE indicator flashes.

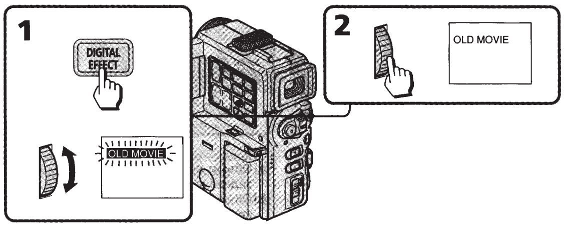
(2) Press the control dial.
The OLD MOVIE indicator lights up.

Придание изображению атмосферы старинного кинофильма

Используя функцию старинного кинофильма, Вы можете записать изображение в виде старинного кинофильма. Видеокамера автоматически установит широкоформатный режим на ON, эффект изображения на SEPIA и выберет надлежащую скорость затвора.

(1) Когда видеокамера будет находиться в режиме готовности или в режиме записи, нажмите DIGITAL EFFECT и поворачивайте регулировочный до тех пор, пока индикатор OLD MOVIE не будет мигать.

(2) Нажмите регулировочный диск.
Индикатор OLD MOVIE будет гореть.



To cancel the old movie function

Press DIGITAL EFFECT.

Notes on the old movie function

- The following functions do not work during old movie mode.
  - Functions using the FADER button
  - PROGRAM AE mode
  - Picture effect mode
  - Wide mode
  - Functions using the PHOTO button
- When you set the POWER switch to OFF, the old movie function will be cancelled automatically.

Для отмены функции старинного кинофильма

Нажмите DIGITAL EFFECT.

Примечания к функции старинного кинофильма

- Следующие функции не работают во время режима старинного кинофильма.
  - Функции с использованием кнопки FADER
  - Режим PROGRAM AE
  - Режим эффектов изображений
  - Широкоформатный режим
  - Функции с исползованием кнопки PHOTO
- Когда Вы установите выключатель POWER в положение OFF, функция старинного кинофильма будет отменена автоматически.

Shooting with backlighting

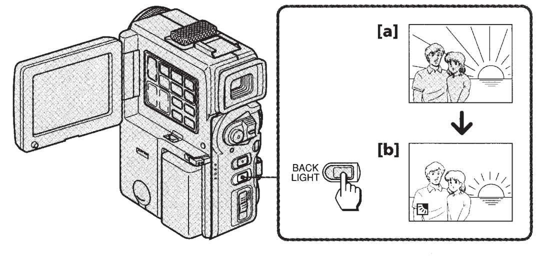
When you shoot a subject with the light source behind the subject or a subject with a light background, use the BACK LIGHT function.

Press BACK LIGHT. The ▨ indicator appears on the LCD screen or in the viewfinder.

Съемка с задней подсветкой

Когда Вы снимаете объект с источником света позади объекта или объект на освещенном фоне, используйте функцию BACK LIGHT.

Нажмите BACK LIGHT. Индикатор ▨ появляется на экране ЖКД или в видоискателе.



[a] Subject is too dark because of backlight.
[b] Subject becomes bright with backlight compensation.

[a] Объект является слишком темным из-за задней подсветки.
[b] Объект становится ярким с помощью компенсации задней подсветки.

After shooting

Be sure to release this adjustment condition by pressing BACK LIGHT again. The ▨ indicator disappears. Otherwise, the picture will be too bright under normal lighting condition.

This function is also effective under the following conditions:

- A subject with a light source nearby or a mirror reflecting light.
- A white subject against a white background. Especially when you shoot a person wearing shiny clothes made of silk or synthetic fiber, his or her face tends to become dark if you do not use this function.

Note on the BACK LIGHT function

When you press EXPOSURE, the BACK LIGHT function is cancelled.

После съемки

Не забудьте отключить состояние этой регулировки путем нажатия BACK LIGHT снова. Индикатор ▨ исчезнет. В противном случае изображение будет слишком ярким в условиях нормального освещения.

Данная функция является эффективной в следующих условиях:

- Для объекта, расположенного рядом с источником света или зеркалом отражающим свет.
- Белый объект на белом фоне. Особенно, когда Вы снимаете человека в блестящей одежде из шелка или синтетического волокна, его или ее лицо может стать темным, если Вы не будете использовать данную функцию.

Примечание к функции BACK LIGHT

Когда Вы нажимаете EXPOSURE функция BACK LIGHT отменяется.

Adjusting the exposure

When to adjust the exposure

Adjust the exposure manually under the following cases.

[a]

[a]
- The backlighting is too bright (back lighting)
- Insufficient light: most of the picture is dark

[b]
- Bright subject and dark background
- To record the darkness faithfully

Adjusting the exposure

(1) Press EXPOSURE. The exposure indicator appears on the LCD screen or in the viewfinder.

(2) Turn the control dial to adjust the exposure. The exposure is locked at the adjusted brightness.

Регулировка экспозиции

Когда требуется регулировать экспозицию

Отрегулируйте экспозицию вручную в следующих случачх.

[b]

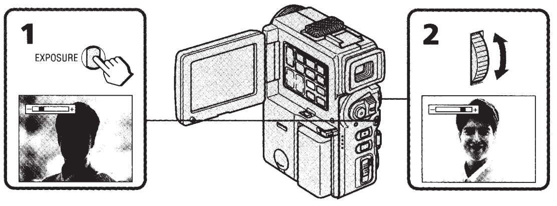
[a]
- Фон является слишком ярким (задняя подсветка)
- Недостаточное освещение: большая часть изображения является темной

[b]
- Яркий предмет на темном фоне
- Для хорошей записи в темноте

Регулировка экспозиции

(1) Нажмите EXPOSURE. Индикатор экспозиции появляется на экране ЖКД или в видоискателе.

(2) Поверните регулировочный диск для регулировки экспозиции. Экспозиция будет зафиксирована на отрегулированной яркости.



To return to automatic exposure mode

Press EXPOSURE to turn off the exposure indicator.

Notes

- The control dial does not have a stop position.
- If you select the PROGRAM AE function in the menu system, the exposure comes back to automatic adjustment again.
- When you adjust the exposure manually, you cannot use the BACK LIGHT function.

Для возврата к режиму автоматической экспозиции

Нажмите EXPOSURE для выключения индикатора экспозиции.

Примечания

- Регулировочный диск не имеет положения остановки.
- Если Вы выбираете функцию PROGRAM AE в системе меню, экспозиция снова возвращается к автоматической регулировке.
- Когда Вы регулируете экспозицию вручную, Вы не можете использовать функцию BACK LIGHT.

Adjusting the white balance

White balance adjustment makes white subjects look white and allows more natural colour balance for camera recording. Normally white balance is automatically adjusted. You can obtain better results by adjusting the white balance manually when lighting conditions change quickly or when recording outdoors: e.g., neon signs, fireworks.

Selecting the appropriate mode

Select the appropriate white balance mode under the following conditions.

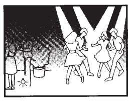
Регулировка баланса белого

Регулировка баланса белого делает так, что белые объекты выглядят белыми и позволяет получить запись с более естественным цветовым балансом при съемке видеокамерой. Обычно баланс белого регулируется автоматически. Но Вы можете получить лучшие результаты путем регулировки баланса белого вручную, когда условия освещения быстро изменяются или в условиях записи на улице: например, неоновые рекламы, фейерверки.

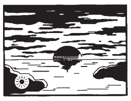
Выбор подходящего режима

Выберите подходящий режим баланса белого для следующих условий.

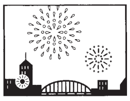
[a]



[b]



[c]



INDOOR mode
- Lighting condition changes quickly. **[a]**
- Too bright place such as photography studios
- Under sodium lamps or mercury lamps

OUTDOOR mode
- Under a colour matching fluorescent lamp
- Recording a sunset/sunrise, just after sunset, just before sunrise **[b]**, neon signs, or fireworks **[c]**

HOLD mode
Recording monochromatic subject or background

Setting the white balance

Select the desired white balance mode in the menu system (p. 33).

To return to automatic white balance mode

Select AUTO in the menu system.

Режим INDOOR
- Условия освещения быстро изменяются. **[a]**
- Слишком яркие места, как например, фотографическая студия.
- При свете натриевых или ртутных ламп.

Режим OUTDOOR
- При освещении лампами дневного света.
- Запись захода/восхода солнца, сразу после захода или перед восходом солнца **[b]**, при неоновых рекламах или фейерверках **[c]**.

Режим HOLD
Запись одноцветных объектов или на однородном фоне.

Установка баланса белого

Выберите желаемый режим баланса белого в системе меню (стр. 33)

Для возврата к режиму автоматической регулировки баланса белого

Выберите AUTO в системе меню.

Using the PROGRAM AE function

You can select from seven PROGRAM AE (Auto Exposure) modes to suit your shooting situation. When you use PROGRAM AE, you can get a Portrait effect (the subject is in focus and the background is out of focus), capture high-speed action, record night views, etc.

Selecting the best mode

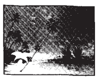
Select a proper PROGRAM AE mode referring to the following description.

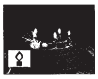
Использование функции PROGRAM AE

Вы можете выбрать один из семи режимов PROGRAM AE (автоматической экспозиции), который подходит для съемки в Вашей ситуации.
Когда Вы используете функцию PROGRAM AE, Вы можете получить портретный эффект (объект в фокусе, а фон не в фокусе), заснять высокоскоростные действия, записать ночные пейзажи и т.д.

Выбор наилучшего режима

Выберите надлежащий режим PROGRAM AE, сверяясь со следующими описаниями.





: Spotlight mode
Recording a subject spotlighted on a stage or at a wedding ceremony, etc.

: Soft portrait mode
To record
- A still subject such as a person or flower
- A softened picture
- A person in clearer flesh tones

: Sports lesson mode
Capturing high-speed action in sports such as golf or tennis

: Beach & Ski mode
Recording a person in a place such as on the beach or in the ski slopes where there is a lot of reflection

: Sunset & Moon mode
Recording sunset, night views, fireworks or neon signs

: Landscape mode
Recording a landscape through a window or wire net

: Low Lux mode
For recording a subject in insufficient light. Subject becomes bright.

: Режим прожекторного освещения
Для записи объекта, освещенного на сцене или на свадебной церемонии и т.д.

: Мягкий портретный режим
Для записи
- Неподвижного объекта, как например человек или цветок
- Мягкого изображения
- Человека в четких телесных тонах

: Режим спортивных занятий
Для съемки высокоскоростных действий в спортивных играх, как например, гольф или теннис

: Пляжный и лыжный режим
Для записи человека, находящегося в таком месте, как например, на пляже или снежном склоне, где очень много отраженного света

: Режим захода солнца и луны
Для записи захода солнца, ночных пейзажев, фейерверков или неоновых реклам

: Ландшафтный режим
Для записи ландшафта через окно или проволочную сетку

: Режим низкой освещенности
Для записи объекта при недостаточном освещении. Объект становится ярким.

Using the PROGRAM AE function

Select the desired PROGRAM AE mode in the menu system (P. 33).

To return to automatic adjustment mode

Select AUTO in the menu system.

Notes on focus setting
- In the Spotlight, Sports lesson and Beach & Ski modes, you cannot take close-ups because the camcorder is set to focus only on subjects in the middle to far distance.
- In the Sunset & Moon and Landscape modes, the camcorder is set to focus only on distant subjects.

Notes on PROGRAM AE
- The following functions do not work during PROGRAM AE mode.
  - – Slow shutter
  - – Old movie
- The following functions do not work during Low Lux mode.
  - – Functions using the DIGITAL EFFECT button
  - – Overlap
  - – Bounce
- Flickering or change in colour may occur in the following modes if recording is carried out under a discharge tube such as a fluorescent lamp, sodium lamp or mercury lamp. If this happens, select AUTO in the menu system.
  - – Soft Portrait mode
  - – Sports Lesson mode
- While setting WHT BAL in the menu system to AUTO, the white balance is adjusted even if the PROGRAM AE is selected.
- You can adjust the exposure even if the PROGRAM AE is selected.

Использование функции PROGRAM AE

Выберите режим PROGRAM AE в системе меню (стр. 33).

Для возврата к режиму автоматической регулировки

Выберите AUTO в системе меню.

Примечания к установке фокусировки
- В режимах прожекторного освещения, спортивных занятий и пляжном и лыжном Вы не можете снимать крупным планом, так как видеокамера фокусируется только на объекты среднего и дальнего удаления.
- В режимах захода солнца и луны и ландшафтном видеокамера фокусируется только на удаленные объекты.

Примечания к PROGRAM AE
- Следующие функции не будут работать в режиме PROGRAM AE.
  - – Медленный затвор
  - – Старинный фильм
- Следующие функции не будут работать в режиме низкой освещенности.
  - – Функции с использованием кнопки DIGITAL EFFECT
  - – Наложение
  - – Изменение размеров изображения
- Мерцание или изменение цвета могут произойти в следующих режимах при съемке под газоразрядными лампами, как например, люминесцентные лампы, ртутные лампы или натриевые лампы. Если это случится, выберите AUTO в системе меню.
  - – Мягкий портретный режим
  - – Режим спортивных занятий
- При установке WHT BAL в системе меню на AUTO баланс белого будет отрегулирован, даже если выбран режим PROGRAM AE.
- Вы можете отрегулировать экспозицию, даже если выбран режим PROGRAM AE.

Focusing manually

When to use manual focus

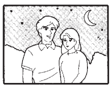
In the following cases you should obtain better results by adjusting the focus manually.

Ручная фокусировка

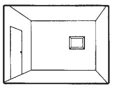
Когда использовать ручную фокусировку

В следующих случаях Вы можете получить лучшие результаты, отрегулировав фокусировку вручную.

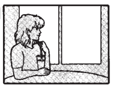
[a]



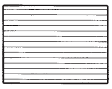
[b]



[c]



[d]



- Insufficient light **[a]**
- Subjects with little contrast — walls, sky, etc. **[b]**
- Too much brightness behind the subject **[c]**
- Horizontal stripes **[d]**
- Subjects through frosted glass
- Subjects beyond nets, etc.
- Bright subject or subject reflecting light
- Shooting a stationary subject when using a tripod

- Недостаточное освещение **[a]**
- Объекты с малым контрастом — стены, небо и т.д. **[b]**
- Слишком яркий фон за объектом **[c]**
- Горизонтальные полосы **[d]**
- Съемка объектов через матированное стекло
- Объекты за сеткой и т.д.
- Яркий объект или объект отражающий свет
- Съемка неподвижного объекта с использованием треноги

Focusing manually

When focusing manually, first focus in telephoto before recording, and then reset the shot length.

(1) Press FOCUS lightly. The Ⓕ indicator appears on the LCD screen or in the viewfinder.

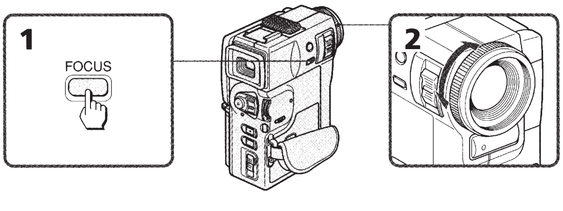
(2) Turn the focus ring to focus on the subject.

Ручная фокусировка

При ручной фокусировке сперва выполняйте фокусировку в режиме телефото перед записью, а затем установите расстояние съемки.

(1) Нажмите FOCUS слегка. Индикатор Ⓕ появится на экране ЖКД или в видоискателе.

(2) Поверните кольцо фокусировки для фокусировки на объект.



To focus in infinity

Press FOCUS deeply. ▲ indicator appears on the LCD screen or in the viewfinder. Release to return to manual focus mode.

To return to the autofocus mode

Press FOCUS lightly to turn off Ⓕ, ▲ or 👤 indicator.

To shoot in relatively dark places or to shoot the subject moving quickly outside

Shoot at wide-angle after focusing in the telephoto position.

Note on manual focusing

The following indicators may appear:

▲ when the lens focuses on the most distant subject.

👤 when the lens focuses on the nearest subject.

Для фокусировки на бесконечность

Нажмите FOCUS до конца. Индикатор ▲ появится на экране ЖКД или в видоискателе. Отпустите для возврата к режиму ручной фокусировки.

Для возврата к режиму автоматической фокусировки

Нажмите FOCUS слегка для выключения индикатора Ⓕ, ▲ или 👤.

Для съемки в относительно темных местах или съемки быстро двигающегося объекта на улице

Производите съемку в положении широкого угла после выполнения фокусировки в положении телефото.

Примечание к ручной фокусировке

Мугут появляться следующие индикаторы:

▲ Когда объектив фокусируется на наиболее удаленный объект.

👤 Когда объектив фокусируется на самый близкий объект.

Releasing the STEADYSHOT function

Отключение функции STEADYSHOT

When the Steady Shot function is working, the camcorder compensates for camera-shake.

You can release the Steady Shot function when you do not need to use it. When the Steady Shot function is released, the ✋ indicator appears in the viewfinder or on the LCD screen. When shooting with a tripod, you can get a more natural picture by releasing the Steady Shot function.

Releasing the Steady Shot function

Set STEADYSHOT in the menu system to OFF (P. 33).

To activate the Steady Shot function again

Select ON in the menu system.

Notes on the Steady Shot function

- The Steady Shot function will not correct excessive camera-shake.
- When you switch the Steady Shot function on or off, the exposure may fluctuate.
- If you use a tele conversion lens (not supplied) or a wide conversion lens (not supplied), the Steady Shot function may not work.

Во время работы функции устойчивой съемки видеокамера компенсирует дрожание камеры.

Вы можете отключить функцию устойчивой съемки, когда Вы не нуждаетесь в ее использовании. Когда функция устойчивой съемки отключена, индикатор ✋ появляется в видоискателе или на экране ЖКД. При съемке с использованием треноги Вы можете получить более естественное изображение путем отключения функции устойчивой съемки.

Отключение функции устойчивой съемки

Установите STEADYSHOT на OFF в системе меню (стр. 33).

Для активизации функции устойчивой съемки снова

Выберите ON в системе меню.

Примечания к функции устойчивой съемки

- Функция устойчивой съемки не откорректирует чрезмерного дрожания видеокамеры.
- При включении и выключении функции устойчивой съемки экспозиция может колебаться.
- Если Вы используете теленасадку (не прилагается) или широкоугольную насадку (не прилагается), функция устойчивой съемки может не работать.

Superimposing a title

Наложение титра

If you use a tape with cassette memory, you can superimpose the titles while recording or after recording. When you playback the tape, the title is displayed for 5 seconds from the point where you superimposed it.
You can select from eight preset titles and two original titles (CUSTOM1, CUSTOM2) to superimpose over the picture.

Если Вы используете ленту кассеты с памятью, Вы можете выполнять наложение титров во время записи или после выполнения записи. Когда Вы воспроизводите ленту, титр отображается в течение 5 секунд от точки его наложения. Вы можете выбирать из восьми предварительно установленных титров и двух собственных титров (CUSTOM1, CUSTOM2) для наложения на изображение.

Superimposing titles

(1) Press TITLE to display the titles on the LCD screen.

(2) Turn the control dial to select □, then press the control dial.

(3) Turn the control dial to select the title, then press the control dial.

(4) Turn the control dial to select COLOUR, SIZE or POSITION, then press the control dial.

(5) Turn the control dial to select the desired item, then press the control dial.

(6) Repeat steps 4 and 5 until the title is arranged as desired.

(7) Press the control dial again to complete the setting.

Наложение титров

(1) Нажмите TITLE для отображения титров на экране ЖКД.

(2) Поверните регулировочный диск для выбора □, а затем нажмите регулировочный диск.

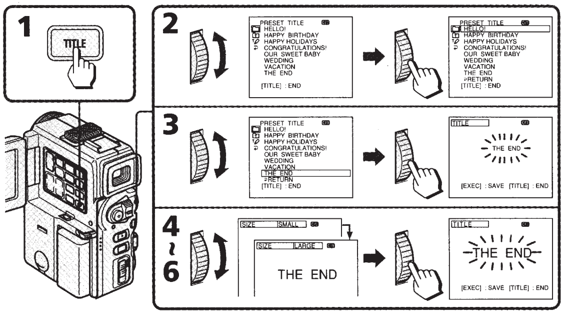
(3) Поверните регулировочный диск для выбора титра, а затем нажмите регулировочный диск.

(4) Поверните регулировочный диск для выбора COLOUR (цвет), SIZE (размер) или POSITION (положение), а затем нажмите регулировочный диск.

(5) Поверните регулировочный диск для выбора желаемого элемента, а затем нажмите регулировочный диск.

(6) Повторяйте пункты 4 и 5 до тех пор, пока не отрегулируете титр по своему желанию.

(7) Нажмите регулировочный диск снова для завершения установки.



While you are playing back, pausing, or recording

After step 7, the "TITLE SAVE" indicator appears on the screen for 5 seconds and the title is set.

While in Standby mode

After step 7, the "TITLE" indicator appears. And when you press START/STOP to start recording, "TITLE SAVE" appears on the screen for 5 seconds and the title is set.

To use the custom title

When you want to use the original title, select ⊡ in step 2.

Notes on superimposing a title

- If you have not given any original title, "– – – – ..." appears on the display.
- The FADER function works while the title is displayed, however, the title does not fade.

Title colour changes as follows :

WHITE ←→ YELLOW ←→ VIOLET ←→ RED ←→ CYAN ←→ GREEN ←→ BLUE

Title size changes as follows :

SMALL ←→ LARGE

Title position changes as follows :

When you select the title size "SMALL", you can choose 9 positions. When you select the title size "LARGE" , you can choose 8 positions.

To display no title during playback

Set TITLE DISP to OFF in the menu system.

Во время воспроизведения, паузы или записи

После пункта 7 индикатор "TITLE SAVE" появится на экране на 5 секунд и титр будет установлен.

В режиме готовнсоти

После пункта 7 появляется индикатор "TITLE". И когда Вы нажимаете START/STOP для начала записи, индикатор "TITLE SAVE" появится на экране на 5 секунд и титр будет установлен.

Для выбора собственного титра

Если Вы хотите использовать собственный титр, выберите ⊡ в пункте 2.

Примечания к наложению титра

- Если Вы не сделали никакого собственного титра, на дисплее появится индикация "– – – – ...".
- Функция FADER во время отображения титра работает, однако титр плавно не вводится и не выводится.

Цвет титра изменяется следующим образом:

WHITE (белый) ←→ YELLOW (жельтый) ←→ VIOLET (фиолетовый) ←→ RED (красный) ←→ CYAN (зеленовато-голубой) ←→ GREEN (зеленый) ←→ BLUE (синий)

Размер титра изменяется следующим образом:

SMALL (маленький) ←→ LARGE (большой)

Положение титра изменяется следующим образом:

Если Вы выбираете размер титра "SMALL", то Вы можете выбрать одно из 9 положений. Когда Вы выбираете размер титра "LARGE", Вы может выбрать одно из 8 положений.

Чтобы титр не отображался во время воспроизведения

Установите TITLE DISP на OFF в системе меню.

Notes on titles

- You cannot superimpose a title to a blank portion of the tape.
- The titles you superimposed are displayed by only using the DV format video equipment with index titler function.
- When you are searching the tape using the other video equipment, the portion of the tape you superimpose the title may be detected as an index signal.
- If you input 13 characters or more for a LARGE title, the title is automatically reduced into a proper size after the position is set.

Notes on the cassettes

- If you use a cassette tape set to prevent accidental erasure, you cannot superimpose or erase the title. Slide the protect tab so that the red portion is not visible.
- You can superimpose about 11 to 20 titles in one cassette, if one title consists of about 5 characters.
- If the tape has too many index signals, you may not be able to superimpose a title because the memory is full.

Примечания к титрам

- Вы не можете наложить титр на незаписанную часть ленты.
- Титры, которые Вы наложили, могут быть отображены только при использовании видеоаппаратуры цифрового видеоформата DV с индексной функцией ввода титров.
- Когда Вы осуществляете поиск на ленте с использованием другой видеоаппаратуры, участок ленты, где Вы наложили титр, может быть детектирован в качестве индексного сигнала.
- Если Вы ввели 13 знаков или более для размера титра LARGE, титр автоматически уменьшается до надлежащего размера после выбора положения.

Примечания к кассетам

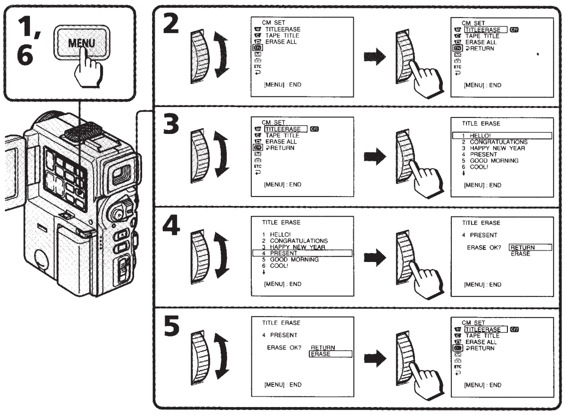
- Если Вы используете кассетную ленту с установкой для предотвращения случайного стирания, Вы не сможете наложить или стереть титр. Передвиньте предохранительный лепесток так, чтобы не было видно красной части.
- Вы можете наложить приблизительно от 11 до 20 титров на одной кассете, если один титр содержит около 5 знаков.
- Если лента имеет слишком много индексных сигналов, то Вы не сможете наложить титр из-за переполнения памяти.

Erasing a title

(1) Press MENU to display the menu on the LCD screen.
(2) Turn the control dial to select CM, then press the control dial.
(3) Turn the control dial to select TITLEERASE, then press the control dial.
(4) Turn the control dial to select the title you want to erase, then press the control dial.
(5) Make sure that title is the one you want to erase. Turn the control dial to select ERASE, then press the control dial.
(6) Press MENU to erase the menu display.

Стирание титра

(1) Нажмите MENU для отображения меню на экране ЖКД.
(2) Поверните регулировочный диск для выбора CM, а затем нажмите регулировочный дисск.
(3) Поверните регулировочный диск для выбора TITLEERASE, а затем нажмите регулировочный диск.
(4) Поверните регулировочный диск для выбора титра, который Вы хотите стереть, а затем нажмите регулировочный диск.
(5) Убедитесь, что это именно тот титр, который Вы хотите стереть. Поверните регулировочный диск для выбора ERASE, а затем нажмите регулировочный диск.
(6) Нажмите MENU для стирания дисплея меню.


1, 6
MENU
2
CM SET
TITLEERASE
TAPE TITLE
ERASE ALL
ETC
[MENU] : END
CM SET
TITLEERASE
TAPE TITLE
ERASE ALL
RETURN
[MENU] : END
3
CM SET
TITLEERASE
TAPE TITLE
ERASE ALL
RETURN
[MENU] : END
TITLE ERASE
1 HELLO!
2 CONGRATULATIONS
3 HAPPY NEW YEAR
4 PRESENT
5 GOOD MORNING
6 COOL!
[MENU] : END
4
TITLE ERASE
1 HELLO!
2 CONGRATULATIONS
3 HAPPY NEW YEAR
4 PRESENT
5 GOOD MORNING
6 COOL!
[MENU] : END
TITLE ERASE
4 PRESENT
ERASE OK? RETURN
ERASE
[MENU] : END
5
TITLE ERASE
4 PRESENT
ERASE OK? RETURN
ERASE
[MENU] : END
CM SET
TITLEERASE
TAPE TITLE
ERASE ALL
RETURN
[MENU] : END

Note

If you use a cassette tape set to prevent accidental erasure, you cannot erase the title. Slide the protect tab on the cassette so that the red portion is not visible.

Примечание

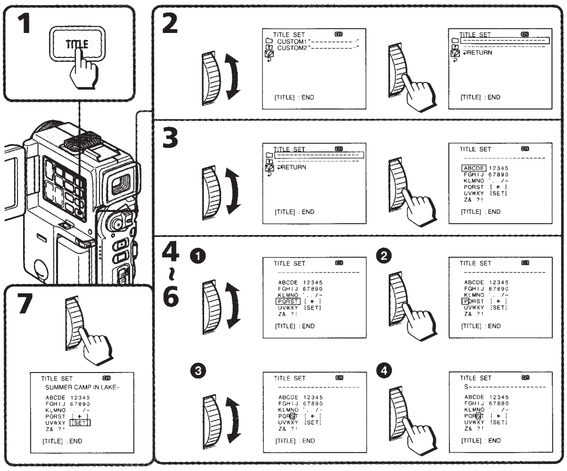
Если Вы используете кассетную ленту с установкой для предотвращения случайного стирания, Вы не сможете стереть титр. Передвиньте предохранительный лепесток так, чтобы не было видно красной части.

Making a custom title

Создание собственного титра

If you use a tape with cassette memory, you can make two titles of up to 20 characters and store it in memory.
(1) Press TITLE to display the titles on the LCD screen.
(2) Turn the control dial to select ✎, then press the control dial.
(3) Turn the control dial to select the first line (CUSTOM1) or second line (CUSTOM2), then press the control dial.
(4) Turn the control dial to select the column of the desired character, then press the control dial.
(5) Turn the control dial to select the desired character, then press the control dial.
(6) Repeat steps 4 and 5 until you finish the title.
(7) For finishing the titling work, turn the control dial to select [SET], then press the control dial.

Если Вы используете ленту кассеты с памятью, Вы можете создать два титра, содержащих до 20 знаков, и сохранить их в памяти.
(1) Нажмите TITLE для отображения титров на экране ЖКД.
(2) Поверните регулировочный диск для выбора ✎, а затем нажмите регулировочный дисск.
(3) Поверните регулировочный диск для выбора первой строки (CUSTOM 1) или второй строки (CUSTOM 2), а затем нажмите регулировочный диск.
(4) Поверните регулировочный диск для выбора колонки с желаемым знаком, а затем нажмите регулировочный диск.
(5) Поверните регулировочный диск для выбора желаемого знака, а затем нажмите регулировочный диск.
(6) Повторяйте пункты 4 и 5 до тех пор, пока не Вы закончите титр.
(7) Для завершения работы по вводу титров поверните регулировочный диск для выбора [SET], а затем нажмите регулировочный диск.


1
TITLE
2
TITLE SET
CUSTOM1
CUSTOM2
[TITLE] : END
TITLE SET
RETURN
[TITLE] : END
3
TITLE SET
RETURN
[TITLE] : END
TITLE SET
ABCDE 12345
FGHIJ 67890
KLMNO ' . . / -
PQRST [←]
UVWXY [SET]
Z& ? !
[TITLE] : END
4 ~ 6
❶
❷
❸
❹
TITLE SET
S
ABCDE 12345
FGHIJ 67890
KLMNO ' . . / -
PQRST [←]
UVWXY [SET]
Z& ? !
[TITLE] : END
7
TITLE SET
SUMMER CAMP IN LAKE-
ABCDE 12345
FGHIJ 67890
KLMNO ' . . / -
PQRST [←]
UVWXY [SET]
Z& ? !
[TITLE] : END

To erase a character

In step 4, turn the control dial to select [←] then press the control dial. The last character is erased.

To change the title you have made

In step 3, turn the control dial to select CUSTOM1 or CUSTOM2 you want to change, then press the control dial. Erase characters one after another, then make the new title again.

Note

You cannot enter over 20 characters title.

If it takes more than 5 minutes to make a title

If the Standby mode lasts for more than 5 minutes with a cassette inserted, the power will be turned off automatically. If the power is turned off while you are making a title, set the POWER switch to OFF once, then to CAMERA. The title you have made remains stored in memory.

Set the POWER switch to VTR or eject cassette so that the power does not go off.

Для стирания знака

В пункте 4 поверните регулировочный диск для выбора [←], а затем нажмите регулировочный диск. Последний знак будет стерт.

Для изменения созданного Вами титра

В пункте 3 поверните регулировочный диск для выбора титра CUSTOM1 или CUSTOM2, который Вы хотите изменить, а затем нажмите регулировочный диск. Сотрите знаки один за другим, а затем опять создайте новый титр.

Примечание

Вы не моежете ввести более 20 знаков для одного титра.

Если проходит более 5 минут при создании титра

Если режим готовности продолжается более 5 минут при вставленной кассете, питание выключится автоматически. Если питание выключится, когда Вы создаете титр, то установите выключатель POWER в положение OFF, а затем в положение CAMERA. Титр, который Вы создали, остается сохраненным в памяти.

Установите выключатель POWER в положение VTR или вытолкните кассету для того, чтобы питание не выключалось.

Labeling a cassette

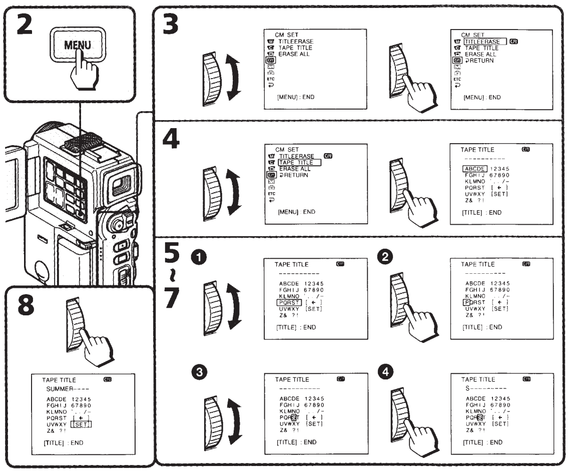
Обозначение кассеты

If you use a tape with cassette memory, you can label a cassette. The label can consist of up to 10 characters and is stored in cassette memory. When you insert the labeled cassette and set the POWER switch to VTR, the label is displayed for about 5 seconds on the LCD screen, in the viewfinder or on the TV screen.

(1) Insert the cassette you want to label.
(2) Press MENU to display the menu on the LCD screen.
(3) Turn the control dial to select CM, then press the control dial.
(4) Turn the control dial to select TAPE TITLE, then press the control dial.
(5) Turn the control dial to select the column of the desired character, then press the control dial.
(6) Turn the control dial to select the desired character, then press the control dial.
(7) Repeat steps 5 and 6 until you finish the label.
(8) Turn the control dial to select [SET], then press the control dial.

Если Вы используeт ленту кассеты с памятью, Вы можете обозначить кассету. Обозначение может содержать до 10 знаков и быть сохраненным в памяти кассеты. Когда Вы вствите обозначенную кассету и установите выключатель POWER в положение VTR, обозначение будет отображено приблизительно в течение 5 секунд на экране ЖКД, в видоискателе или на экране телевизора.

(1) Вставьте кассету, которую Вы хотите обозначить.
(2) Нажмите MENU для отображения меню на экране ЖКД.
(3) Поверните регулировочный диск для выбора CM, а затем нажмите регулировочный дисск.
(4) Поверните регулировочный диск для выбора TAPE TITLE, а затем нажмите регулировочный диск.
(5) Поверните регулировочный диск для выбора колонки с желаемым знаком, а затем нажмите регулировочный диск.
(6) Поверните регулировочный диск для выбора желаемого знака, а затем нажмите регулировочный диск.
(7) Повторяйте пункты 5 и 6 до тех пор, пока Вы не закончите обозначение.
(8) Поверните регулировочный диск для выбора [SET], а затем нажмите регулировочный диск.



Labeling a cassette

Обозначение кассеты

To erase a character
In step 5 turn the control dial to select [←], then press control dial. The last character is erased.

To change the label you have made
Insert the cassette to change the label, and operate in the same way to make a new label.

If the C̸M mark appears in step 4
The cassette memory is full. If you erase the title in the cassette, you can label it.

If you have superimposed titles in the cassette
When the label is displayed, up to 4 titles also appear.

Note on "-----" indicator displayed on the LCD screen or in the viewfinder
The "-----" indicates the number of characters you can select for the label. When the "-----" indicator has fewer than 10 spaces, the cassette memory is full.

Note on the cassettes
If you use a cassette tape set to prevent accidental erasure, you cannot label it. Slide the protect tab so that the red portion is not visible.

Для стирания знака
В пункте 5 поверните регулировочный диск для выбора [←], а затем нажмите диск. Последний знак будет стерт.

Для изменения обозначения, которое Вы сделали
Вставьте кассету, обозначение которой Вы хотите изменить, и выполните такую же операцию, как и для создания ее нового обозначения.

Если в пункте 4 появляется знак C̸M
Память кассеты заполнена. Если Вы сотрете титр из памяти кассеты, Вы сможете обозначить ее.

Если Вы наложили титры на кассете
При отображении обозначения появятся также 4 титра.

Примечание к индикатору "-----", отображаемому на экране ЖКД или в видоискателе
"-----" указывает количество знаков, которые Вы можете выбрать для обозначения кассеты. Если индикатор "-----" имеет менее 10 пустых мест, память кассеты заполнена.

Примечание к кассетам
Если Вы используете кассетную ленту с установкой для предотвращения случайного стирания, Вы не сможете обозначить ее. Передвиньте предохранительный лепесток так, чтобы не было видно красной части.

Watching on a TV screen

Просмотр на экране телевизора

Connect the camcorder to your VCR or TV to watch the playback picture on the TV screen. When monitoring the playback picture by connecting the camcorder to your TV, we recommend you to use mains for the power source.

Подсоедините видеокамеру к Вашему КВМ или телевизору для просмотра воспроизводимого изображения на экране телевизора. При просмотре воспроизводимого изображения путем подсоединения видеокамеры к Вашему телевизору мы рекомендуем Вам использовать электрическую сеть в качестве источника питания.

Watching on a TV screen

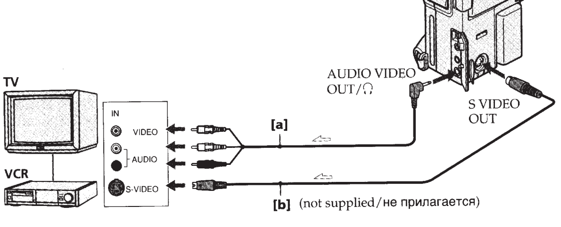
Просмотр на экране телевизора

Connecting directly to a VCR/TV with Audio/Video input jacks

Open the jack cover and connect the camcorder to the inputs on the TV by using the supplied A/V connecting cable. Set the TV/VCR selector on the TV to VCR.
Turn down the volume of the camcorder.
To get higher quality pictures in DV format, connect the camcorder to your TV using the S video connecting cable (not supplied).
If you are going to connect the camcorder using the S video connecting cable (not supplied) **[b]**, you do not need to connect the yellow (video) plug of the A/V connecting cable **[a]**.

Подсоединение прямо к КВМ/ телевизору с входными гнездами аудио/видео

Откройте крышку гнезда и подсоедините видеокамеру к входам на телевизоре с использованием прилагаемого соединительного кабеля аудио/видео.
Установите селектор TV/VCR на телевизоре в положение VCR.
Понизьте громкость на видеокамере.
Для получения лучшего качества изображений в формате DV, подсоедините видеокамеру к телевизору с использованием соединительного кабеля S-видео (не прилагается).
Если Вы подсоединяете видеокамеру с использование кабеля S-видео (не прилагается) **[b]**, Вам не нужно подсоединять желтый (видео) разъем соединительного кабеля аудио/видео **[a]**.



: Signal flow/ Передача сигнала

If your VCR or TV is a monaural type
Connect the yellow plug of the A/V connecting cable to the video input jack and the white or the red plug to the audio input jack on the VCR or the TV. When the white plug is connected, the left channel audio is output, and the red plug is connected, the right channel audio is output.

Если Ваш КВМ или телевизор монофонического типа
Подсоедините желтый разъем соединительного кабеля аудио/видео к входному видеогнезду, а белый или красный разъем – к входномму аудиогнезду на КВМ или телевизоре. Если подсоединен белый разъем, то выходным является левый аудиоканал, а если подсоединен красный разъем, то выходным является правый аудиоканал.

Enjoying digital effect during playback

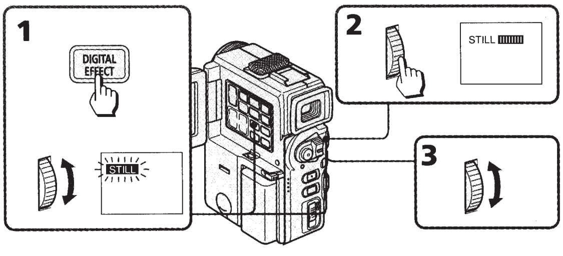
Наслаждение цифровыми эффектами во время воспроизведения

During playback, you can process a scene using the digital effect functions; Still, Flash motion, Luminancekey and Trail. For the features of each function, refer to previous pages.
You can watch the processed picture on a TV or use it for editing on other video equipment. You cannot record on this camcorder during this operation.

(1) During playback, press DIGITAL EFFECT and turn the control dial until the desired digital effect indicator (STILL, FLASH, LUMI. or TRAIL) flashes.
(2) Press the control dial.
The digital effect indicator lights up and the bars appear. In still or luminancekey mode, the picture where you press the control dial is stored in memory as a still picture.
(3) Turn the control dial to adjust the effect.

Во время воспроизведения Вы можете обработать сцену с использованием функций цифровых эффектов: стоп-кадра, периодического движения, замещения яркого изображения переднего плана и запаздывания. Для ознамкомления с особенностями каждой функции обратитесь к предыдущим страницам.
Вы можете смотреть обработанное изображение на экране телевизора или использовать его для монтажа на другую видеоаппаратуру. Вы не можете выполнять запись на данной видеокамере во время такой операции.

(1) Во время воспроизведения нажмите DIGITAL EFFECT и поварачивайте регулировочный диск до тех пор, пока желаемый индикатор цифрового эффекта (STILL, FLASH, LUMI. или TRAIL) не начнет мигать.
(2) Нажмите регулировочный диск.
Индикатор цифрового эффекта будет гореть, и появляются полосы шкалы этой функции. В режиме стоп-кадра или замещения яркого изображения переднего плана изображение при нажатии регулировочного диска запоминается в памяти, как неподвижное изображение.
(3) Поверните регулировочный диск для регулировки эффекта.



To cancel the digital effect function
Press DIGITAL EFFECT.

Note on the digital effect function
In skip scan, slow or pause mode, noise appears on the picture.

Для отмены функции цифрового эффекта
Нжамите DIGITAL EFFECT.

Примечание к функции цифрового эффекта
При выполнении поиска методом прогона, замедленном воспроизведении или режиме паузы на изображении будут появляться помехи.

Searching the boundaries of recorded tape with date – date search

Поиск границ на записанной ленте с помощью даты – поиск даты

You can search for the boundaries of recorded date - Date Search function. To search for the beginning of the specific date and play back from the point, there are two ways:
- Using cassette memory, you can select the date displayed on the LCD screen or in the viewfinder.
- Without using cassette memory, you can search for the boundaries of recorded date.

You can only operate with the Remote Commander.

Searching for the date by using cassette memory

You can use this function only when playing back a tape with cassette memory (p. 89).

(1) Set CM SEARCH to ON in the menu system (P. 33).
(2) Press SEARCH MODE on the Remote Commander repeatedly, until the date search indicator appears.
(3) Press ⏮ or ⏭ to select the date for playback.
Playback starts from the beginning of the selected date automatically.

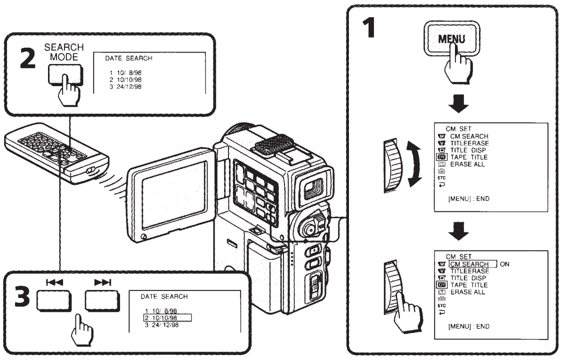
Вы можете выполнять поиск границ между записанными датами – Функция поиска даты. Для поиска начала определенной даты и воспроизведения от того места существуют два способа:
- Используя кассету с памятью, Вы можете выбрать дату, отображаемую на экране ЖКД или в видоискателе.
- Без использования кассетной памяти Вы можете осуществлять поиск границ записанной даты.

Вы можете выполнить операцию только с помощью пульта дистанционного управления.

Поиск даты с использованием кассеты с памятью

Вы можете использовать данную функуию только при воспроизведении ленты кассеты с памятью (стр. 89).

(1) Установите CM SEARCH на ON в системе меню (стр. 33).
(2) Повторно нажимайте SEARCH MODE на пульте дистанционного управления до тех пор, пока не появится индикатор поиска даты.
(3) Нажмите ⏮ или ⏭ для выбора даты, желаемой для воспроизведения.
Воспроизведение начинается от начала выбранной даты автоматически.


1
MENU
CM SET
CM SEARCH
TITLEERASE
TITLE DISP
TAPE TITLE
ERASE ALL
ETC
[MENU] : END
CM SET
CM SEARCH ON
TITLEERASE
TITLE DISP
TAPE TITLE
ERASE ALL
ETC
[MENU] : END
2
SEARCH MODE
DATE SEARCH
1 10/ 8/98
2 10/10/98
3 24/12/98
3
⏮ ⏭
DATE SEARCH
1 10/ 8/98
2 10/10/98
3 24/ 12/98

Searching the boundaries of recorded tape with date – date search

Поиск границ на записанной ленте с помощью даты – поиск даты

To stop searching
Press ■.

Notes
- The interval of the boundaries between the dates needs more than two minutes. The camcorder may not search if the beginning of the recorded date is too close to the next one.
- The cursor in the ▭ mark indicates the present point on the tape.
- If a tape has a blank portion in the recorded portions, the Date Search function will not work correctly.
- The cursor on the screen indicates the date selected last time.

Для остановки поиска
Нажмите ■.

Примечания
- Интервал между границами дат должен быть больше двух минут. Видеокамера может не найти начало записанной даты, если оно слишком близко к следующей записанной дате.
- Курсор на знаке ▭ указывает текущую точку на ленте.
- Если на ленте имеется незаписанный участок внутри записанной части, поиск даты может функционировать неправильно.
- Курсор на экране указывает дату, выбранную в последний раз.

Searching the boundaries of recorded tape with date – date search

Поиск границ на записанной ленте с помощью даты – поиск даты

Searching for the date without using cassette memory

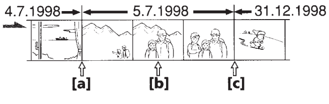
You can use this function whether the tape has cassette memory or not.

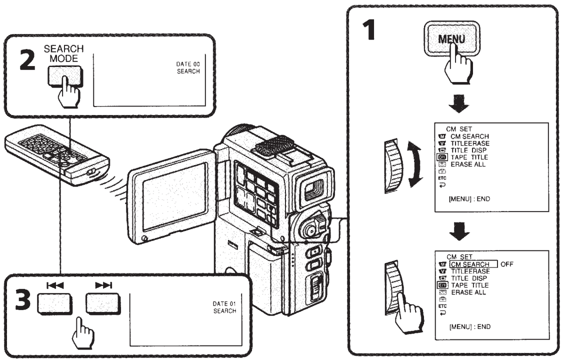
(1) Set CM SEARCH to OFF in the menu system (P. 33).
(2) Press SEARCH MODE on the Remote Commander repeatedly, until the date search indicator appears.
(3) When the current position is **[b]**, press ⏮ to search towards **[a]** or press ⏭ to search towards **[c]**. Each time you press ⏮ or ⏭, the camcorder searches for the previous or next date.
Playback starts automatically when date changed.

Поиск даты без использования кассетной памяти

Вы можете использовать данную функцию независимо от того, имеет ли кассета память или нет.

(1) Установите CM SEARCH на OFF в системе меню (стр. 33)
(2) Повторно нажимайте SEARCH MODE на пульте дистанционного управления до тех пор, пока не появится индикатор поиска даты.
(3) Если Ваше текущее положение **[b]**, нажмите ⏮ для поиска в направлении **[a]** или нажмите ⏭ для поиска в направлении **[c]**. Каждый раз при нажатии ⏮ или ⏭ видеокамера осуществляет поиск предыдущей или последующей даты.
При изменении даты воспроизведение начинается автоматически.


4.7.1998
5.7.1998
31.12.1998
[a]
[b]
[c]


1
MENU
CM SET
CM SEARCH
TITLEERASE
TITLE DISP
TAPE TITLE
ERASE ALL
ETC
[MENU] : END
CM SET
CM SEARCH OFF
TITLEERASE
TITLE DISP
TAPE TITLE
ERASE ALL
ETC
[MENU] : END
2
SEARCH MODE
DATE 00 SEARCH
3
⏮ ⏭
DATE 01 SEARCH

To stop searching
Press ■.

Для остановки поиска
Нажмите кнопку ■.

Searching the boundaries of recorded tape with title – title search

Поиск границ на записанной ленте с помощью титра – поиск титра

You can search for the boundaries of recorded tape with title – Title search function. If you use a tape with cassette memory, you can select the title displayed on the LCD screen or in the viewfinder.

You can only operate with the Remote Commander.

Searching for the title by using cassette memory

You can use this function only when playing back a tape with cassette memory (p. 89).

(1) Set CM SEARCH to ON in the menu system (P. 33).
(2) Press SEARCH MODE on the Remote Commander repeatedly, until the title search indicator appears.
(3) Press ⏮ or ⏭ to select the title for playback.
Playback starts from the scene of the selected title automatically.

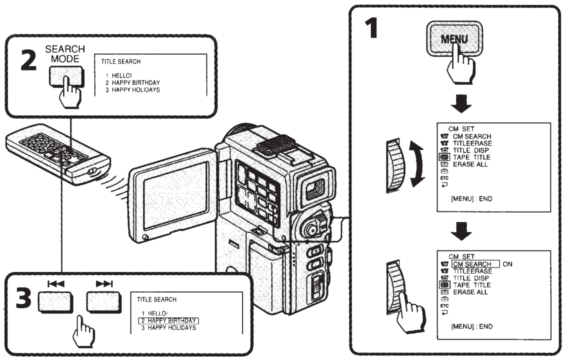
Вы можете найти границы на записанной ленте с помощью титра – функция поиска титра. Если Вы используете ленту кассеты с памятью, Вы можете выбрать титр, отображаемый на экране ЖКД или в видоискателе.

Вы можете управлять только с использованием пульта дистанционного управления.

Поиск титра с использованием кассеты с памятью

Вы можете использовать данную функцию только при воспроизведении ленты кассеты с памятью (стр. 89).

(1) Установите CM SEARCH на ON в системе меню (стр. 33).
(2) Повторно нажимайте SEARCH MODE на пульте дистанционного управления до тех пор, пока не появится индикатор поиска титра.
(3) Нажмите ⏮ или ⏭ для выбора титра для воспроизведения.
Воспроизведение начинается с фрагмента с выбранным титром автоматически.


1
MENU
CM SET
CM SEARCH
TITLEERASE
TITLE DISP
TAPE TITLE
ERASE ALL
ETC
[MENU] : END
CM SET
CM SEARCH ON
TITLEERASE
TITLE DISP
TAPE TITLE
ERASE ALL
ETC
[MENU] : END
2
SEARCH MODE
TITLE SEARCH
1 HELLO!
2 HAPPY BIRTHDAY
3 HAPPY HOLIDAYS
3
⏮ ⏭
TITLE SEARCH
1 HELLO!
2 HAPPY BIRTHDAY
3 HAPPY HOLIDAYS

To stop searching
Press ■.

Notes
- You cannot superimpose or search a title, if you use a cassette tape without cassette memory.
- The camcorder may not search, if a tape has a blank portion in the recorded portions.

Для остановки поиска
Нажмите ■.

Примечания
- Вы не можете наложить или найти титр, если Вы используете ленту кассеты без памяти.
- Видеокамера может не выполнить поиск, если имеется незаписанный участок между записанными частями на ленте.

Searching for a photo – photo search/photo scan

You can search for the recorded still picture - Photo Search function. There are two modes in Photo Search:
- Using cassette memory, you can select the recorded date and time which is displayed on the LCD screen or in the viewfinder.
- Without using cassette memory, you can search the still picture regardless of the date and time.

You can also search for still pictures one after another and display each picture for five seconds automatically - Photo Scan function. Even if your tape has no cassette memory, you can use the Photo Scan function.

You can only operate with the Remote Commander.

Поиск фотографий – фотопоиск/ фотосканирование

Вы можете выполнить поиск записанного неподвижного изображения – Функция фотопоиска. Существует два режима выполнения фотопоиска:
- Используя память кассеты, Вы можете выбрать записанные дату и время, которые отображаются на экране ЖКД или в видоискателе.
- Без использования кассетной памяти вы можете осуществлять поиск неподвижного изображения независимо от даты и времени.

Вы также можете выполнять последовательный поиск неподвижных изображений одного за другим и отображать каждое изображение в течение пяти секунд автоматически – Функция фотосканирования. Даже если Ваша кассета не имеет памяти, Вы можете использовать функцию фотосканирования.

Вы можете выполнять операции только с помощью пульта дистанционного управления.

Searching for a photo by using cassette memory

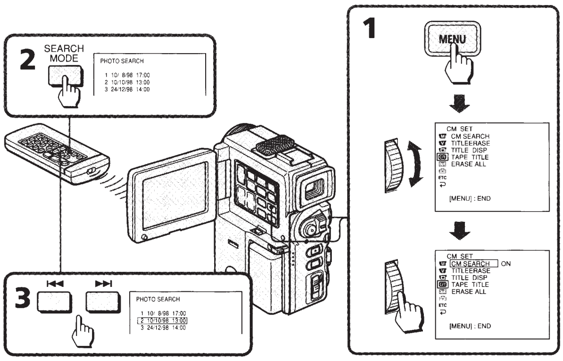
You can use this function only when playing back a tape with cassette memory (p. 89).

(1) Set CM SEARCH to ON in the menu system (P. 33).
(2) Press SEARCH MODE on the Remote Commander repeatedly, until the photo search indicator appears.
(3) Press ⏮ or ⏭ to select the photo.
The photo of the selected date appears automatically.

Поиск фотографий с использованием кассеты с памятью

Вы можете использовать данную функцию только при наличии ленты кассеты с памятью (стр. 89).

(1) Установите CM SEARCH на ON в системе меню (стр. 33).
(2) Повторно нажимайте SEARCH MODE на пульте дистанционного управления до тех пор, пока не появится индикатор фотопоиска.
(3) Нажмите ⏮ или ⏭ для выбора фотографии.
Фотография выбранной даты появляется автоматически.



To stop searching
Press ■.

Note
When you play back a tape which has a blank portion in the recorded portions, the Photo Search function will not work correctly.

Для остановки поиска
Нажмите ■.

Примечание
Если Вы поспроизводите ленту, которая имеет незаписанный участок между записанными частями, функция фотопоиска будет работать неправильно.

Searching for a photo without using cassette memory

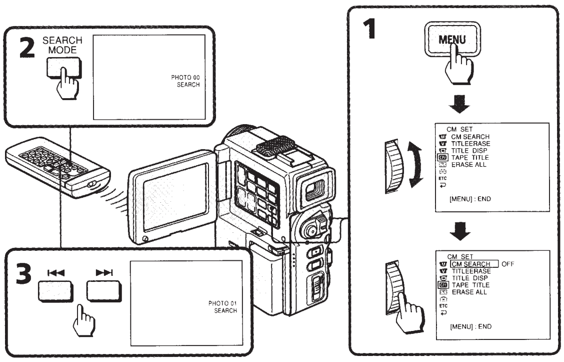
You can use this function whether the tape has cassette memory or not.

(1) Set CM SEARCH to OFF in the menu system (P. 33).
(2) Press SEARCH MODE on the Remote Commander repeatedly, until the photo search indicator appears.
(3) Press ⏮ or ⏭ to select the photo for playback. Each time you press ⏮ or ⏭, the camcorder searches for the previous or next scene.
The selected photo appears automatically.

Поиск фотографий без использования кассетной памти

Вы можете использовать данную функцию независимо от того, имеет ли кассета память или нет.

(1) Установите CM SEARCH на OFF в системе меню (стр. 33).
(2) Повторно нажимайте SEARCH MODE на пульте дистанционного управления до тех пор, пока не появится индикатор фотопоиска.
(3) Нажмите ⏮ или ⏭ для выбора фотографии для воспроизведения. Каждый раз при нажатии ⏮ или ⏭ видеокамера осуществляет поиск предыдущей или последующей сцены.
Выбранная фотография появляется автоматически.



To stop searching
Press ■.

Для остановки поиска
Нажмите ■.

Scanning photo

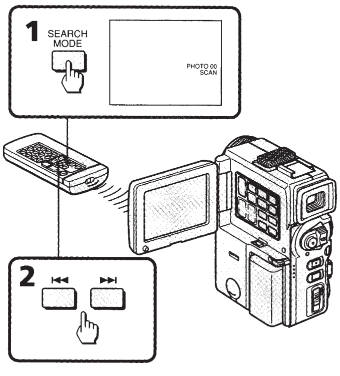
You can use this function whether the tape has cassette memory or not.

(1) Press SEARCH MODE on the Remote Commander repeatedly until the photo scan indicator displayed on the LCD screen.
(2) Press ⏮ or ⏭.
Each photos are played back for about 5 seconds automatically.

Сканирование фотографий

Вы можете использовать данную функцию независимо от того, имеет ли лента кассетную память или нет.

(1) Повторно нажимайте SEARCH MODE на пульте дистанционного управления до тех пор, пока на экране ЖКД не появится индикатор фотосканирования.
(2) Нажмите ⏮ или ⏭.
Каждая фотография будет воспроизводится приблизительно в течение 5 секунд автоматически.



To stop scanning
Press ■.

Для остановки поиска
Нажмите ■.

Returning to a pre-registered position

Возврат к предварительно зарегистрированной позиции

Using the Remote Commander, you can easily go back to the desired point on a tape after playback.

(1) During playback, press ZERO SET MEMORY at the point you later want to locate. The counter shows "0:00:00" and "ZERO SET MEMORY" appears on the LCD screen or in the viewfinder.

(2) Press ■ when you want to stop playback.

(3) Press ◀◀ to rewind or press ▶▶ to fast-forward the tape to the counter's zero point. The tape stops automatically when the counter reaches approximately zero. "ZERO SET MEMORY" disappears and the time code appears.

(4) Press ▶.

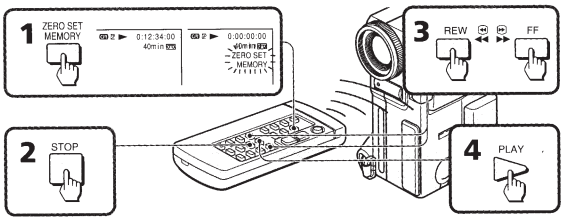
Используя пульт дистанционного управления Вы можете легко вернуться к желаемой точке ленты после воспроизведения.

(1) Во время воспроизведения нажмите ZERO SET MEMORY в месте, которое Вы хотите потом обнаружить. Счетчик будет показывать "0:00:00" и "ZERO SET MEMORY" появится на экране ЖКД или в видоискател.

(2) Нажмите ■ когда Вы захотите остановить воспроизведение.

(3) Нажмите ◀◀ для ускоренной перемотки ленты назад или ▶▶ для ускоренной перемотки ленты вперед до нулевой точки счетчика. Лента остановится автоматически, когда счетчик дойдет приблизительно до нуля. "ZERO SET MEMORY" исчезает и появляется временной код.

(4) Нажмите ▶.



Note on the tape counter
There may be a discrepancy of several seconds from the time code.

Notes on ZERO SET MEMORY

- When you press ZERO SET MEMORY, the counter's zero point is memorized. Press ZERO SET MEMORY again before step 3 to cancel the memory .
- ZERO SET MEMORY may not function when there is a blank portion between pictures on a tape.
- ZERO SET MEMORY functions also in recording standby mode.

Примечание к счетчику ленты
Может быть расхождение на несколько секунд с временным кодам.

Примечания к ZERO SET MEMORY

- Когда Вы нажимаете ZERO SET MEMORY, нулевая точка счетчика запоминается. Снова нажмите ZERO SET MEMORY перед пунктом 3 для стирания памяти.
- Функция ZERO SET MEMORY может не работать, если на ленте имеются незаписанные части между изображениями.
- Функция ZERO SET MEMORY работает также и в режиме готовности записи.

Displaying recording data - data code function

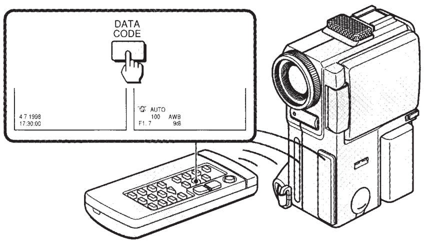
Отображение данных записи - Функция кода данных

You can display recording data (date/time or various settings when recorded) on the LCD screen or in the viewfinder during playback - Data Code function. When DISPLAY in the menu is set toV-OUT/LCD, the Data Code is also displayed on the TV.
You can only operate with the Remote Commander.

Press DATA CODE on the Remote Commander during playback.

Вы можете отобразить данные записи (дату/время или различные установки при записи) на экране ЖКД или в видоискателе во время воспроизведения – Функция кода данных. Когда функция DISPLAY в системе меню установлена на V-OUT/LCD, код данных также может быть отображен на экране телевизора.
Вы можете выполнить операцию только с помощью пульта дистанционного управления.

Нажмите DATA CODE на пульте дистанционного управления во время воспроизведения.



To select the items to display
Set DATA CODE in the menu system, and select the following items:
When DATE/CAM is selected: date/time → various settings (Steady Shot, white balance, gain, shutter speed, aperture value) → no indicator.
When DATE is selected: date/time → no indicator.

When bars (-- -- --) appear

- A blank portion of the tape is being played back.
- The tape was recorded by a camcorder without having date and time set.
- The tape is unreadable due to tape damage or noise.

Для выбора элементов отображения
Установите DATA CODE в системе меню и выберите следующие установки:
При выборе DATE/CAM: дата/время → различные установки (устойчивая съемка, баланс белого, усиление, скорость затвора, значение апертуры) → нет индикации.
При выборе DATE: дата/время → нет индикации.

Если появлются черточки (-- -- --)

- Воспроизводится незаписанная часть ленты.
- Лента была записана на видеокамере без установки даты и времени.
- Лента не может быть воспроизведена из-за повреждения ленты или помех.

Editing onto another tape

Монтаж на другую ленту

You can create your own video programme by editing with any other DV DV, MiniDV mini DV, 8 8 mm, Hi8 Hi8, VHS VHS, SVHS S-VHS, VHSC VHSC, SVHSC S-VHSC or B Betamax VCR that has audio/video inputs. You can edit with little deterioration of picture and sound quality when using the DV connecting cable.

Before editing

Connect the camcorder to the VCR using the VMC-2DV/4DV DV connecting cable (not supplied) or the supplied A/V connecting cable.

Using the DV connecting cable

Simply connect the VMC-2DV/4DV DV connecting cable (not supplied) to DV IN/OUT and to DV IN/OUT of the DV products. With digital-to-digital connection, video and audio signals are transmitted in digital form for high-quality editing.

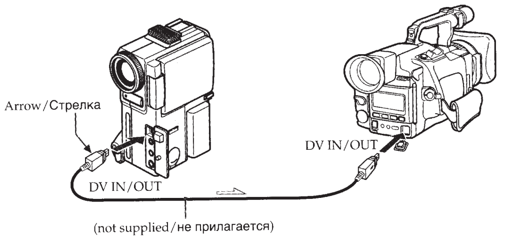
Вы можете создать Вашу собственную видеопрограмму путем монтажа с помощью другого КВМ типа DV DV, MiniDV mini DV, 8 8 мм, Hi8 Hi8, VHS VHS, SVHS S-VHS, VHSC VHSC, SVHSC S-VHSC или B Betamax, который имеет входы аудио/видео. Вы можете смонтировать новую ленту с небольшим ухудшением качества изображения и звучания при использовании соединительного цифрового видеокабеля.

Перед монтажем

Подсоедините видеокамеру к КВМ, используя соединительный цифровой видеокабель VMC-2DV / 4DV (не прилагается) или прилагаемый соденительный кабель аудио/видео.

Использование соединительного цифрового видеокабеля

Просто подключите соединительный цифровой видеокабель VMC-2DV / 4DV (не прилагается) к гнезду DV IN/OUT и к гнезду DV IN/OUT цифровой видеоаппаратуры. При цифровом-к-цифровому соединении видеосигнылы и аудиосигналы передаются в цифровой форме для обеспечения высококачественного монтажа.



: Signal flow/ Передача сигнала

Editing onto another tape

Монтаж на другую ленту

Notes on editing when using the DV connecting cable

- You can connect one VCR only.
- You can record picture, sound and system data at the same time on the DV products by using the DV connecting cable only.
- You cannot edit the titles, display indicator, or the contents of cassette memory.
- If you record playback pause picture via the DV jack, the recorded picture becomes rough. And when you playback the picture using the other video equipments, the picture may jitter.
- You can also use the camcorder as a recorder with this connection. In this case, "DV IN" indicator appears on the screen.
- When using this camcorder as a recorder, only the recording buttons on the Remote Commander can be used. Press both red and black buttons simultaneously. When using this camcorder as a recorder, the pictures on a monitor may be uneven, however, these on the LCD screen, in the viewfinder or recorded pictures are not affected.
- You can not use the functions using the DIGITAL EFFECT button.

Using the A/V connecting cable [b] or S video connecting cable (not supplied) [a]

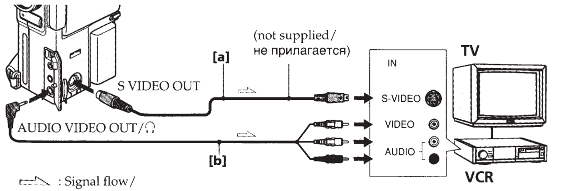
Set the input selector on the VCR to LINE.

Примечания к монтажу при использлзовании соединительного цифрового видеокабеля

- Вы можете подсоединить только один КВМ.
- Вы можете записывать изображение, звук и системные данные одновременно на цифровую видеоаппаратуру только при использовании соединительного цифрового видеокабеля.
- Вы не можете выполнить монтаж титров, индикаторов дисплея или содержимого кассетной памяти.
- Если Вы записываете изображение в режиме паузы воспроизведения через гнездо DV, записанное изображение будет нечетким. А если Вы воспроизводите изображение с использованием другой видеоаппаратуры, изображение может дрожать.
- Вы можете также использовать видео-камеру в качестве магнитофона с использованием данного соединения. В этом случае индикатор "DV IN" появится на экране.
- При использовании видеокамеры в качестве магнитофона только кнопки записи на пульте дистанционного управления могут быть использованы. Нажмите и красную и черную кнопки одновременно. При использовании данной видеокамеры в качестве магнитофона изображение на мониторе может быть нестабильным, однако это не оказывает влияния на экран ЖКД, видоискатель или записанное изображение.
- Вы не можете использовать функции с использованием кнопки DIGITAL EFFECT.

Использование соединительного кабеля аудио/видео [b] или соединительного кабеля S-видео (не прилагается) [a]

Установите селектор входных сигналов на КВМ в положение LINE.



: Signal flow/ Передача сигнала

Editing onto another tape

Notes on editing when using the A/V connecting cable
- Press DATA CODE, SEARCH MODE, or DISPLAY to turn off the display indicators. Otherwise, the indicators will be recorded on the tape.
- If your TV or VCR is a monaural type, connect the yellow plug of the A/V connecting cable for video to the TV or VCR. Connect only the white or red plug for audio to the TV or VCR. If you connect the white plug, the sound is L (left) signal. If you connect the red plug, the sound is R (right) signal.
- You can edit precisely by connecting a LANC cable (not supplied) to this camcorder and other video equipment having fine synchro-editing function, using this camcorder as a player.

Starting editing

(1) Insert a blank tape (or a tape you want to record over) into the VCR, and insert your recorded tape into the camcorder.
(2) Play back the recorded tape on the camcorder until you locate the point just before where you want to start editing, then press ❚❚ to set the camcorder in playback pause mode.
(3) On the VCR, locate the recording start point and set the VCR in recording pause mode.
(4) First press ❚❚ on the camcorder, and after a few seconds press ❚❚ on the VCR to start editing.

To edit more scenes
Repeat steps 2 to 4.

To stop editing
Press ■ on both the camcorder and the VCR.

Монтаж на другую ленту

Примечания к монтажу при использовании соединительного кабеля аудио/видео
- Нажмите DATA CODE, SEARCH MODE или DISPLAY для выключения индикаторов дисплея. В противном случае индикаторы будут записаны на ленту.
- Если Ваш телевизор или KBM монофонического типа. Подсоедините желтый разъем соединительного кабеля аудио/видео для видеосигналов к телевизору или KBM. Подсоедините только белый или красный разъем для аудиосигналов к телевизору или KBM. Если Вы подсоедините белый разъем, то звук будет передаваться L (левым) сиганалом. Если Вы подсоедините красный разъем, то звук будет передаваться R (правым) сигналом.
- Вы можете выполнить точный монтаж путем подсоединения кабеля LANC (не прилагается) к данной видеокамере и другой видеоаппаратуре, имеющей функцию точного синхронного монтажа, используя данную видеокамеру в качестве видеоплейера.

Начните монтаж

(1) Вставьте чистую ленту (или ленту, которую Вы хотите перезаписать) в KBM и вставьте Вашу записанную ленту в видеокамеру.
(2) Воспроизводите записанную ленту в видеокамере до тех пор, пока Вы не обнаружите точку перед тем местом, откуда Вы хотите начать монтаж, а затем нажмите ❚❚ для установки видеокамеры на режим паузы воспроизведения.
(3) Найдите на KBM точку начала записи и установите KBM на режим паузы записи.
(4) Сперва нажмите ❚❚ на видеокамере, а затем через несколько секунд нажмите ❚❚ на KBM для начала монтажа.

Для монтажа других сцен
Повторите пункты со 2 по 4.

Для остановки монтажа
Нажмите ■ и на видеокамере и на KBM.

Replacing recording on a tape – insert editing

You can insert a new scene from a VCR onto your originally recorded tape by specifying starting and ending points.
Connection is the same as in "Using the DV connecting cable" on page 82. In recording and recording pause mode, DV IN/OUT jack automatically works as input jack.
You can only operate with Remote Commander.

(1) While pressing the small green button on the POWER switch, set it to VTR.
(2) On the VCR, locate just before the start point to be inserted and set to playback pause mode.
(3) On the camcorder, press ▶ to set it to playback mode, and then locate the point where the insert should end by pressing ◀◀ or ▶▶. Then press ❚❚ to set it to playback pause mode.
(4) Press ZERO SET MEMORY on the Remote Commander. The ZERO SET MEMORY indicator flashes and the end point of the insert is stored in memory.
(5) On the camcorder, locate the point where the insert should begin by pressing ◀◀, then press ● REC on the Remote Commander to set it to recording pause mode.
(6) First press ❚❚ on the VCR, and after a few seconds press ❚❚ on the camcorder to start insert editing.

The insert editing stops automatically near the counter's zero point. Press ■ to set the camcorder to stop mode.

To change the end point
Press ZERO SET MEMORY on the Remote Commander so that the ZERO SET MEMORY indicator disappears and begin from step 3.

To record without setting the end point
Skip steps 3 and 4. Press ■ when stopping insert editing.

Notes on the inserted picture
- The picture may be distorted at the end of the inserted portion when it is played back.
- The picture and sound recorded on the portion where you insert a new scene will be erased when you insert a new scene.
- If you insert a new scene (picture and sound) on a tape recorded by other camcorder (including DCR-PC1E), the picture and sound quality may become worse.

Замещение записи на ленте - монтаж в режиме вставки

Вы можете вставить новую сцену, записываемую с KBM, на Вашу первоначально записанную ленту путем указания начальной и конечной точки.
Соединения будут такими же, как и при "Использовании соединительного цифрового видеокабеля" на стр. 82. При записи и в режиме паузы записи гнездо DV IN/OUT автоматически работает в качестве входного гнезда.
Вы можете выполнить операцию только с помощью пульта дистанционного управления.

(1) Нажимая маленькую зеленую кнопку на выключателе POWER, устарновите его в положение VTR.
(2) Найдите на KBM место перед начальной точкой для вставки и установите его на режим паузы воспроизведения.
(3) Нажмите на видеокамере ▶ для установки ее на режим воспроизведения, а затем найдите точку, где вставка должна быть закончена путем нажатия ◀◀ или ▶▶. Затем нажмите ❚❚ для установки ее на режим паузы воспроизведения.
(4) Нажмите ZERO SET MEMORY на пульте дистанционного управления. Индикатор ZERO SET MEMORY будет мигать и конечная точка вставки запоминается в памяти.
(5) Найдите на видеокамере точку, где запись должна начинаться путем нажатия ◀◀, а затем нажмите ● REC на пульте дистанционного управления для установки ее на режим паузы записи.
(6) Сперва нажмите ❚❚ на KBM и через несколько секунд нажмите ❚❚ на видеокамере для начала монтажа в режиме вставки.

Монтаж в режиме вставки автоматически остановится около нулевой точки счетчика. Нажмите ■ для установки видеокамеры на режим останова.

Для изменения конечной точки
Нажмите ZERO SET MEMORY на пульте дистанционного управления так, чтобы индикатор ZERO SET MEMORY исчез и начните с пункта 3.

Для записи без установки конечной точки
Пропустите пункты 3 и 4. Нажмите ■ для остановки монтажа в режиме вставки.

Примечания к вставленному изображению
- Изображение может быть искажено в конце вставленной части при воспроизведении.
- Изображение и звук, ранее записанные на той части ленты, где Вы вставите новую сцену, будут стерты.
- Если Вы вставляете новую сцену (изображение и звук) на ленту, записанную на другой видеокамере (включая DCR-PC1E), качество изображения и звука может стать хуже.

Audio dubbing

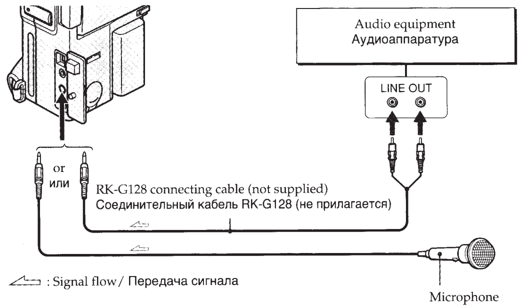
You can record an audio sound to add to the original sound on a tape by connecting audio equipment or a microphone. If you connect the audio equipment, you can add a sound on your recorded tape by specifying starting and ending points. The original sound will not be erased.

Connect the audio equipment using the RK-G128 connecting cable (not supplied) or a microphone (not supplied).

Наложение звукового сопровождения

Вы можете записывать звуковое сопровождение для добавления к исходному звуку на ленте путем подсоединения аудиоаппаратуры или микрофона. Если Вы подсоедините аудиоаппаратуру, Вы можете добавить звук на Вашу записанную ленту путем указания начальной и конечной точки. Исходный звук не будет стерт.

Подсоедините аудиоаппаратуру с использованием соединительного кабеля RK-G128 (не прилагается) или микрофон (не прилагается).


Audio equipment
Аудиоаппаратура
LINE OUT
or
или
RK-G128 connecting cable (not supplied)
Соединительный кабель RK-G128 (не прилагается)
: Signal flow / Передача сигнала
Microphone
(not supplied)
Микрофон (не
прилагается)

Note
You can check the recorded sound connecting the AUDIO VIDEO OUT/🎧 (headphones) jack to headphones.
The recorded sound is not output from the speaker. Check the sound by using headphones.

Примечание
Вы можете проверить записанный звук, соединив гнездо AUDIO VIDEO/🎧 (головных телефонов) с головными телефонами. Записываемый звук не воспроизводится через громкоговоритель. Контролируйте звук путем использования головных телефонов.

Audio dubbing

Notes on audio dubbing
- A new sound cannot be recorded on a tape already recorded in the 16BIT mode (32 kHz, 44.1 kHz or 48 kHz).
- When an external microphone is not connected, the recording will be made through the built-in microphone of the camcorder.
- A new sound cannot be recorded on a tape already recorded in the LP mode.
- If you add a new sound on a tape recorded with another camcorder (including another DCR-PC1E), the sound quality may deteriorate.
- Remove the AV connecting cable from the camcorder. If not removed, audio dubbing is not possible.

Adding an audio sound on a recorded tape

(1) Insert your recorded tape into the camcorder.
(2) While pressing the small green button on the POWER switch, set it to VTR.
(3) On the camcorder or Remote Commander, locate the point where the recording should begin by pressing ◀◀ or ▶▶. Then press ❚❚ to set it to playback pause mode.
(4) Press AUDIO DUB on the Remote Commander. ⊖❚❚ (green) mark appears in the viewfinder or on the LCD screen.
(5) Press ❚❚ on the camcorder or Remote Commander and at the same time start playing back the audio you want to record. The new sound will be recorded in stereo 2. The recorded sound in stereo 1 is not heard. While adding an audio sound, ⊖ (red) mark appears in the viewfinder or on the LCD screen.
(6) Press ■ on the camcorder or Remote Commander at the point where you want to stop recording.

Наложение звукового сопровождения

Примечания к наложению звукового сопровождения
- Новый звук не может быть записан на ленту, предварительно записанную в режиме 16BIT (32 кГц, 44,1 кГц или 48 кГц).
- Когда внешний микрофон не подключен, запись будет выполняться через встроенный микрофон видеокамеры.
- Новый звук не может быть записан на ленте, предварительно записанной в режиме LP.
- Если Вы наложите новый звук на ленту, записанную на другой видеокамере (включая другую видеокамеру DCR-PC1E), то качество звука может ухудшиться.
- Отсоедините соединительный кабель аудио/видео от видеокамеры. Если он не отсоединен, наложение звукового сопровождения невозможно.

Добавление звукового сопровождения на записанную ленту

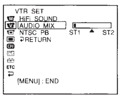
(1) Вставьте Вашу записанную кассету в видеокамеру.
(2) Нажимая маленькую зеленую кнопку на выключателе POWER, установите его в положение VTR.
(3) Найдите точку, где запись должна начаться путем нажатия ◀◀ или ▶▶ на видеокамере или пульте дистанционного управления. Затем нажмите ❚❚ для установки видеокамеры на режим паузы воспроизведения.
(4) Нажмите AUDIO DUB на пульте дистанционного управления. Знак ⊖❚❚ (зеленый) появится в видоискателе или на экране ЖКД.
(5) Нажмите ❚❚ на видеокамере или пульте дистанционного управления и одновременно начните воспроизводить аудиоисточник, который Вы хотите записать. Новый звук будет записан в стереорежиме 2. Записанный звук в стереорежиме 1 слышен не будет.
Во время добавления звукового сопровождения знак ⊖ (красный) появляется в видоискателе или на экране ЖКД.
(6) Нажмите ■ на видеокамере или пульте дистанционного управления в точке, где Вы захоите остановить запись.

To play back the new recorded sound

Adjust the balance between the original sound (ST1) and the new sound (ST2) by selecting AUDIO MIX in the menu system.

Для воспроизведения нового записанного звука

Отрегулируйте баланс между исходным звуком (ST1) и новым звуком (ST2), выбрав установку AUDIO MIX в системе меню.



Notes on AUDIO MIX

Five minutes after when you disconnect the power source or remove the battery pack, the settings of AUDIO MIX return to the original sound (ST1) only. The factory setting is original sound only.

To end audio mixing more precisely

First playback the tape and press ZERO SET MEMORY on the Remote Commander at the point where you want to stop audio mixing. Then start recording from step 2. The recording stops automatically at the point where you pressed ZERO SET MEMORY.

Примечание к AUDIO MIX

Через пять минут после отсоединения источника питания или удаления батарейного блока, установка AUDIO MIX возвращается только к исходному звучанию (ST1). Заводская установка является только исходным звучанием.

Для более точного окончания звукового микширования

Сперва начните воспроизведение ленты и нажмите ZERO SET MEMORY на пульте дистанционного управления в точке, где Вы хотите остановить звуковое микширование. Затем начните запись с пункта 2. Запись остановится автоматически в точке, где Вы нажали ZERO SET MEMORY.

Additional information

Usable cassettes and playback modes

Selecting cassette types

You can use the Mini DV mini DV cassette only. You cannot use any other DV DV, 8 8 mm, Hi8 Hi8, VHS VHS, SVHS S-VHS, VHSC VHSC, SVHSC S-VHSC or B Betamax cassette.

We recommend mini DV cassette with cassette memory.

There are two types of mini DV cassettes: with cassette memory and without cassette memory. We recommend you to use the tape with cassette memory. The IC memory is mounted on this type of mini DV cassette. This camcorder can read and write data such as dates of recording or titles, etc. to this memory. The functions using the cassette memory require successive signals recorded on the tape. If the tape has a blank portion in the recorded portions, a title may not be displayed properly or the search functions may not work properly. Not to make any blank portion on the tape, operate the followings.

Press END SEARCH to go to the end of the recorded portion before you begin the next recording if you operate the followings:

- you have ejected the cassette while recording.
- you have played back the tape in the VTR mode.

If there is a blank portion or discontinuous signal on your tape, re-record from the beginning to the end of the tape concerning above.

The same result may occur when you record using a digital video camera recorder without a cassette memory function on a tape recorded by one with the cassette memory function.

Tapes with cassette memory have CM (Cassette Memory) mark. Sony recommends that you use a tape having CM mark to enjoy this camcorder fully.

Дополнительная информация

Используемые кассеты и режимы воспроизведения

Выбор типов кассет

Вы можете использовать только кассеты Mini DV mini DV. Вы не можете использовать какую-либо другую кассету DV DV, 8 8 мм, Hi8 Hi8, VHS VHS, SVHS S-VHS, VHSC VHSC, SVHSC S-VHSC или B Betamax.

Мы рекомендуем использовать кассету mini DV с памятью

Имеется два типа кассет mini DV: с кассетной памятью и без кассетной памяти. Мы рекомендуем Вам использовать ленты с кассетной памятью. На таком типе кассет mini DV установлено запоминающее устройтсво в виде ИС. Данная видеокамера может считывать и записывать данные, такие как даты выполнения записей или титры и т.д. с использованием этого запоминающего устройства. Функции, использующие память кассеты, нуждаются в непрерывных сигналах, записанных на ленте. Если лента имеет незаписанный участок между записанными частями, то титр межет не отображаться надлежащим образом, или функции поиска могут работать неправильно. Чтобы на ленте не получилось ни одной незаписанной части выполняйте следующее.

Нажмите END SEARCH для перехода к концу записанной части перед началом следующей записи, если было сделано следующее:

- Вы вытолкнули кассету во время выполнения записи.
- Вы воспроизвели ленту в режиме VTR.

Если на Вашей ленте имеется незаписанный участок или прерывающийся сигнал, то вследствие вышеупомянутого перезапишите такую ленту от начала до конца.

Такой же результат может произойти, когда Вы выполняете запись с использованием цифровой видеокамеры без функции памяти кассеты на ленте, записанной на видеокамере с функцией памяти кассеты.

Ленты с кассетной памятью имеют знак CM (кассетная память). Фирма Sony рекомендует, чтобы Вы использовали кассеты со знаком CM для полного наслаждения от использования данной видеокамеры.

When you play back

Copyright signal

When playing back

Using any other video camera recorder, you cannot record on a tape that has recorded a copyright control signals for copyright protection of software which is played back in this camcorder.

When recording

Using this camcorder, you cannot record software that has recorded a copyright control signals for copyright protection of software. "COPY INHIBIT" appears on the LCD screen, in the viewfinder or on the TV screen if you try to record such software.

Audio mode

12BIT mode: The original sound can be recorded in stereo 1, and the new sound in stereo 2. The balance between stereo 1 and stereo 2 can be adjusted by selecting AUDIO MIX in the menu system during playback. Both sounds can be played back.

16BIT mode: A new sound cannot be recorded but the original sound can be recorded in high quality.

Во время воспроизведения

Сигнал авторского права

Во время воспроизведения

Используя какую-либо другую видеокамеру, Вы не можете выполнить запись на ленте, которая была записана с контрольными сигналами авторского права для защиты авторского права видеопрограммы, которая воспроизводится на данной видеокамере.

Во время записи

Используя данную видеокамеру, Вы не можете записать видеопрограмму, которая была записана с контрольными сигналами авторского права для защиты авторского права видеопрограммы. "COPY INHIBIT" появляется на экране ЖКД, в видоискателе или на экране телевизора, если Вы пытаетесь записать такую видеопрограмму.

Аудиорежим

Режим 12BIT: Исходный звук может быть записан в стереорежиме 1, а новый звук в стереорежиме 2. Баланс между стереозвучанием 1 и стереозвучанием 2 может быть отрегулирован путем выбора установки AUDIO MIX в системе меню во время воспроизведения. Оба звучания могут быть воспроизведены.

Режим 16BIT: Новый звук не может быть записан, но исходный звук может быть записан с высоким качеством.

Notes on the mini DV cassette

To prevent accidental erasure

Slide out the protect tab on the cassette so that the red portion is visible. **[a]**

When affixing a label on the mini DV cassette

Be sure to affix a label on only the location as illustrated below so as not to cause malfunction of the camcorder. **[b]**

After using the mini DV cassette

Rewind the tape to the beginning, put the cassette in its case, and store it in an upright position.

Note on gold-plated connector

If the gold-plated connector of mini DV cassettes is dirty or dusty, you may not operate the function using cassette memory. Clean up the gold-plated connector with cotton-wool swab, about every 10 times ejection of a cassettes. **[c]**

Примечания к кассете mini DV

Для предотвращения случайного стирания

Передвиньте защитный лепесток на кассете так, чтобы была видна крансная метка. **[a]**

При приклеивании этикетки на кассету mini DV

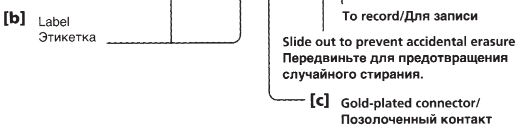
Обязательно наклейте этикетку только на место, указанное ниже на рисунке, так, чтобы не вызвать повреждение видеокамеры. **[b]**

После использования кассеты mini DV

Перемотайте ленту назад на начало, положите кассету в ее футляр и храните ее в вертикальном положении.

Примечание к позолоченному контакту

Если позолоченный контакт кассеты mini DV станет грязным или пыльным, Вы не сможете управлять функциями с использованием памяти кассеты. Очищайте позолоченный контакт с помощью ватного или шерстяного тампона приблизительно через каждые 10 выталкиваний кассеты. **[c]**


[a]
[b] Label
Этикетка
To record/Для записи
Slide out to prevent accidental erasure./
Передвиньте для предотвращения случайного стирания.
[c] Gold-plated connector/
Позолоченный контакт

Resetting the date and time

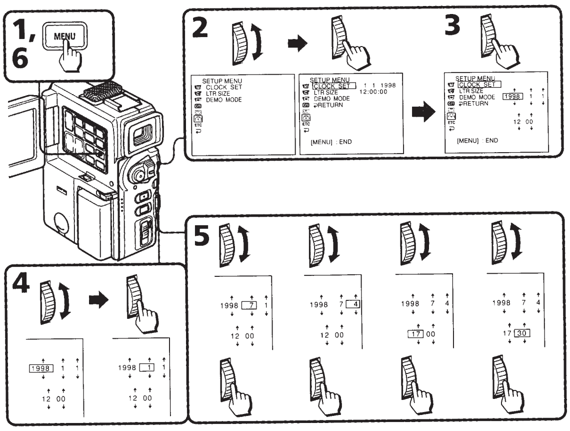
The date and time are set at the factory. Set the time according to the local time in your country.

(1) Press MENU to display the menu on the LCD screen.
(2) Turn the control dial to select ⊟, then press the control dial.
(3) Select CLOCK SET, then press the control dial.
(4) Turn the control dial to adjust the year, and then press the control dial.
(5) Set the month, day, hour and minutes by turning and pressing the control dial.
(6) Press MENU to erase the menu display.

Установка даты и времени

Дата и время установлены на заводе. Установите время в соответствии с местным временем в Вашей стране.

(1) Нажмите MENU для отображения меню на экране ЖКД.
(2) Поверните регулировочный диск для выбора ⊟, а затем нажмите регулировочный диск.
(3) Выберите CLOCK SET, а затем нажмите регулировочный диск.
(4) Поверните регулировочный диск для регулировки года, а затем нажмите регулировочный диск.
(5) Установите месяц, дату, час и минуты путем поворачивания и нажатия регулировочного диска.
(6) Нажмите MENU для стирания дисплея меню.



To correct the date and time setting

Repeat the above procedure.

Для корректировки установки даты и времени

Повторите вышеописанную процедуру.

About the lithium battery

Your camcorder is supplied with a rechargeable lithium battery installed so as to retain the date and time, etc., regardless of the setting of the POWER switch. The lithium battery is always charged as long as you are using the camcorder. The battery, however, will get discharged gradually if you do not use the camcorder. It will be completely discharged in about 4 monthes if you do not use the camcorder at all. Even if the lithium battery is not charged, it will not affect the camcorder operation. To retain the date and time, etc., charge the battery if the battery is discharged. The following are charging methods:

- Connect the camcorder to mains using the supplied AC power adaptor, and leave the camcorder with the POWER switch turned off for more than 24 hours.
- Or, install the fully charged battery pack in the camcorder, and leave the camcorder with the POWER switch turned off for more than 24 hours.

The year indicators changes as follows:

$1998 \longrightarrow 1999 \longrightarrow \ldots 2000 \ldots \longrightarrow 2029$

Note on the time indicator

The internal clock of this camcorder operates on a 24-hour cycle.

Относительно литиевой батарейки

Ваша видеокамера оснащена аккумуляторной литиевой батарейкой для сохранения даты и времени и т.д., независимо от установки выключателя POWER. Литиевая батарейка всегда подзаряжается, когда Вы используете видеокамеру. Однако, батарейка постепенно будет разряжаться, если Вы не используете видеокамеру. Она полностью разрядится приблизительно за 4 месяца, если Вы вообще не будете использовать видеокамеру. Даже если литиевая батарейка не заряжена, это не будет влиять на работу видеокамеры. Для сохранения даты и времени и т.д. заряжайте батарейку, если батарейка разряжена. Существуют следующие методы зарядки:

- Подсоедините видеокамеру к электрической сети с использованием прилагаемого сетевого адаптера перем. тока и оставьте видеокамеру при выключенном выключателе POWER более, чем на 24 часа.
- Установите полностью заряженный батарейный блок в видеокамеру и оставьте видеокамеру при выключенном выключателе POWER более, чем на 24 часа.

Индикатор года изменяется следующим образом:

$1998 \longrightarrow 1999 \longrightarrow \ldots 2000 \ldots \longrightarrow 2029$

Примечание к индикатору времени

Встроенные часы данной видеокамеры работают в 24-часовом цикле.

Simple setting of clock by time difference

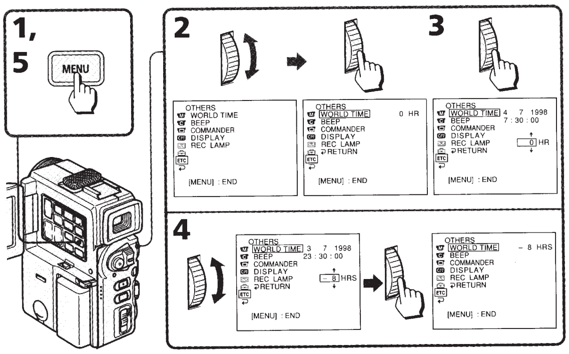
You can easily set the clock for a local time by a time difference in the menu system.

(1) Press MENU to display the menu on the LCD screen.
(2) Turn the control dial to select **ETC**, then press the control dial.
(3) Turn the control dial to select WORLD TIME, then press the control dial.
(4) Turn the control dial to set a time difference, then press the control dial. The hour of clock changes in relation to a time difference which you set.
(5) Press MENU to erase the menu display.

Простая установка часов с помощью разницы во времени

Вы можете легко установить часы на местное время с помощью разницы во времени в системе меню.

(1) Нажмите MENU для отображения меню на экране ЖКД.
(2) Поверните регулировочный диск для выбора **ETC**, а затем нажмите диск
(3) Поверните регулировочный диск для выбора WORLD TIME, а затем нажмите диск.
(4) Поверните регулировочный диск для установки разницы во времени, а затем нажмите диск. Время на часах изменится в соответствии с разницей во времени, которую Вы установили.
(5) Нажмите MENU для стирания дисплея меню.



Note on WORLD TIME

If the time is not set, WORLD TIME dose not work.

Примечание к фукции WORLD TIME

Если время не установлено, функция WORLD TIME не работает.

Tips for using the battery pack

This section shows you how you can get the most out of your battery pack.

Preparing the battery pack

Always carry additional batteries

Have sufficient battery pack power to do 2 to 3 times as much recording as you have planned.

Battery life is shorter in a cold environment

Battery efficiency is decreased, and the battery will be used up more quickly, if you are recording in a cold environment.

To save battery power

Do not leave the camcorder in Standby mode when not recording to save the battery power. A smooth transition between scenes can be made even if recording is stopped and started again. While you are positioning the subject, selecting an angle, or looking at the LCD screen or through the viewfinder, the lens moves automatically and the battery is used. The battery is also used when a tape is inserted or removed.

When to replace the battery pack

While you are using your camcorder, the remaining battery indicator on the LCD screen or in the viewfinder decreases gradually as battery power is used up.
The remaining time in minutes also appears.

Советы по использованию батарейного блока

Данный раздел показывает, как Вы можете получить наибольшую отдачу от Вашего батарейного блока

Подготовка батарейного блока

Всегда носите дополнительные батарейные блоки

Имейте достаточный заряд батарейного блока для выполнения записи в 2 – 3 раза больше, чем Вы запланировали.

Срок службы заряда батарейного блока будет короче в холодных условиях

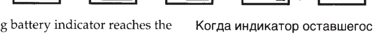
Эффективность батарейного блока понижается, и заряд батарейного блока используется быстрее, если Вы производите запись в холодных условиях.

Для экономии заряда батарейного блока

Для экономии заряда батарейного блока не оставляйте видеокамеру в режиме готовности, когда Вы не производите запись. Плавный переход между сценами может быть выполнен, даже если запись была остановлена и начата снова. Когда Вы позиционируете объект, выбираете угол или смотрите на экран ЖКД или в видоискатель, объектив перемещается автоматически, и батарейный блок будет использоваться. Батарейный блок также используется при вставке и удалении ленты.

Когда заменять батарейный блок

Когда Вы используете видеокамеру, индикатор оставшегося заряда батарейного блока на экране ЖКД или в видоискателе постепенно уменьшается по мере использования заряда батарейного блока. Также появляется оставшееся время в минутах.



When the remaining battery indicator reaches the lowest point, the 🪫 indicator appears and starts flashing on the LCD screen or in the viewfinder. When the 🪫 indicator changes from slow flashing to rapid flashing while you are recording, set the POWER switch to OFF on the camcorder and replace the battery pack. Leave the tape in the camcorder to obtain a smooth transition between scenes after the battery pack has been replaced.

Когда индикатор оставшегося заряда батарейного блока достигает наинизшей точки, индикатор 🪫 появляется и начинает мигать на экране ЖКД или в видоискателе. Когда индикатор 🪫 на экране ЖКД изменяет медленное мигание на быстрое мигание во время записи, установите выключатель POWER в положение OFF на видеокамере и замените батарейный блок. Оставьте ленту в видеокамере для получения плавного перехода между сценами после замены батарейного блока.

Notes on the rechargeable battery pack

Caution

Never leave the battery pack in temperatures above 60°C (140°F), such as in a car parked in the sun or under direct sunlight.

The battery pack heats up

During charging or recording, the battery pack heats up. This is caused by energy that has been generated and a chemical change that has occurred inside the battery pack. This is not cause for concern, and is normal.

Battery pack care

- **Remove the battery pack from the camcorder after using it**, and keep it in a cool place. When the battery pack is installed to the camcorder, a small amount of current flows to the camcorder even if the POWER switch is set to OFF. This shortens battery life.
- The battery pack is always discharging even when it is not in use after charging. Therefore, you should charge the battery pack right before using the camcorder.

The life of the battery pack

If the battery indicator flashes rapidly just after turning on the camcorder with a fully charged battery pack, the battery pack should be replaced with a new fully charged one.

Charging temperature

You should charge batteries at temperatures from 10°C to 30°C (from 50°F to 86°F). Lower temperatures require a longer charging time.

Примечания к перезаряжаемому батарейному блоку

Предостережение

Никогда не оставляйте батарейный блок при температуре свыше 60°C (140°F), как например, в автомобиле, припаркованном на солнце, или под прямыми солнечными лучами.

Батарейный блок нагревается

Во время зарядки или записи батарейный блок нагревается. Это вызвано генерируемой энергией и химическими реакциями, которые происходят внутри батарейного блока. Это не должно быть причиной для беспокойства и является нормальным.

Уход за батарейным блоком

- **Снимите батарейный блок с видеокамеры после использования** и храните его в прохладном месте. Когда батарейный блок установлен на видеокамеру, небольшое количесвто электрического тока поступает на видеокамеру, даже если выключатель POWER установлен в положение OFF. Это сокращает срок службы заряда батарейного блока.
- Батарейный блок всегда разряжается, даже если он не используется после зарядки. Поэтому Вы должны заряжать батарейный блок непосредственно перед использованием видеокамеры.

Срок службы батарейного блока

Если индикатор батарейного блока мигает быстро сразу после включения видеокамеры с полностью заряженным батарейным блоком, батарейный блок должен быть заменен новым полностью заряженным батарейным блоком.

Температура зарядки

Вы должны заряжать батарейный блок при температуре от 10°C до 30°C (от 50°F до 86°F). Более низкая температура требует более длительного времени зарядки.

Notes on the "InfoLITHIUM" Battery Pack

What is the "InfoLITHIUM" battery pack

The "InfoLITHIUM" battery pack is a lithium battery pack which can exchange data with compatible video equipment about its battery consumption.
When you use this battery pack with video equipment having the ⓘ ***InfoLITHIUM*** mark, the video equipment will indicate the remaining battery time in minutes.*

* The indication may not be accurate depending on the condition and environment which the equipment is used under.

How the battery consumption is displayed

The power consumption of the camcorder changes depending on its use, such as whether the LCD is used or not, how the autofocusing is working on or not.
While checking the condition of the camcorder, the "InfoLITHIUM" battery pack measures the battery consumption and calculates the remaining battery power. If the condition changes drastically, the remaining battery indication may suddenly decrease or increase by more than 2 minutes.
Even if 5 to 10 minutes is indicated as the battery remaining time on the LCD screen or in the viewfinder, the ▭ indicator may also flash under some conditions.

Примечания к батарейному блоку "InfoLITHIUM"

Что такое батарейный блок "InfoLITHIUM"

"InfoLITHIUM" является литиевым батарейным блоком, который может обмениваться данными с совместимой видеоаппаратурой относительно расхода заряда батарейного блока.
При использовании данного батарейного блока с видеоаппаратурой, имеющей знак ⓘ ***InfoLITHIUM***, видеоаппаратура будет показывать оставшееся время заряда батарейного блока в минутах.*

* Показание можеть быть неточным, в зависимости от условий и окружающей среды при которых используется аппаратура.

Как отображается расход заряда батарейного блока

Потребляемая мощность видеокамерой изменяется в зависимости от условий ее использования, как например, используется ли ЖКД или нет, работает ли автоматическая фокусировка или нет.
Во время проверки состояния видеокамеры батарейный блок "InfoLITHIUM" измеряет расход батарейного заряда и вычисляет оставшийся заряд батарейного блока. Если условия использования сильно изменяются, индикация оставшегося заряда батарейного блока может резко уменьшиться или увеличиться более чем на 2 минуты.
Даже если 5 – 10 минут указано на экране ЖКД или в видоискателе в качестве оставшегося времени заряда батарейного блока, индикатор ▭ может все же мигать при некоторых условиях.

To obtain more accurate remaining battery indication

Set the camcorder to recording standby mode and point towards a stationary object. Do not move the camcorder for 30 seconds or more.

- If the indication seems incorrect, use up the battery and then recharge it fully (Full charge[1]). Note that if you have used the battery in a hot or cold environment for long time, or you have repeated charging many times, the battery may not be able to show the correct time even after being fully charged.
- After you have used the "InfoLITHIUM" battery pack with an equipment not having the ⓘ ***InfoLITHIUM*** mark, make sure that you use up the battery on the equipment having the ⓘ ***InfoLITHIUM*** mark and then recharge fully.

Why the remaining battery indication does not match the continuous recording time in the operating instructions

The recording time is affected by the environmental temperature and conditions. The recording time becomes very short in a cold environment. The continuous recording time in the operation manual is measured under the condition of using a fully charged (or normal charged[2]) battery pack in 25 °C (77 °F). As the environmental temperature and condition are different when you actually use the camcorder, the remaining battery time is not same as the continuous recording time in the operating instructions.

[1] Full charge: Charging for about 1 hour after the charge lamp of the AC power adaptor goes off.

[2] Normal charge: Charging just until the charge lamp of the AC power adaptor goes off.

Для получения более точной индикации оставшегося заряда батарейного блока

Установите видеокамеру на режим готовности записи и наведите ее на неподвижный объект. Не двигайте видеокамеру в течение 30 секунд или более.

- Если индикация кажется неправильной, используйте батарейный блок до конца, а затем полностью зарядите его (полная зарядка[1]). Имейте в виду, что если Вы использовали батарейный блок в жарких или холодных окружающих условиях в течение длительного времени, или если Вы повторяли зарядку много раз, батарейный блок может не показывать правильное время даже после полной зарядки.
- После использования батарейного блока "InfoLITHIUM" с аппаратурой, которая не имеет знака ⓘ ***InfoLITHIUM*** обязательно используйте заряд батарейного блока до конца с аппаратурой, имеющей знак ⓘ ***InfoLITHIUM***, а затем полностью зарядите его.

Почему индикация оставшегося заряда батарейного блока не соответствует времени непрерывной записи, указанному в инструкции по эксплуатации

На время записи влияет температура окружающей среды и другие условия. Время записи становится очень коротким в холодных условиях. Время непрерывной записи, указанное в инструкции по эксплуатации, измеряется в условиях использования полностью заряженного батарейного блока (или нормально заряженного[2]) при температуре 25°C (77°F). Так как температура окружающей среды и другие условия отличаются в реальных условий использования видеокамеры, то время оставшегося заряда батарейного блока будет не таким, как время непрерывной записи, указанное в инструкции по эксплуатации.

[1] Полная зарядка: Зарядка приблизительно еще в течение 1 часа после того, как погаснет лампочка зарядки сетевого адаптера переменного тока.

[2] Нормальная зарядка: Зарядка только до тех пор, пока не погаснет ламочка зарядки сетевого адаптера переменного тока.

Notes on charging

A brand-new battery pack

A brand-new battery pack is not charged. Before using the battery pack, charge it completely.

Recharge the battery pack whenever you like

You do not have to discharge it before recharging. If you charged the battery pack fully but you did not use it for a long time, it becomes discharged. Then recharge the battery pack before use.

Notes on the terminals

If the terminals (metal parts on the back) are not clean, the battery charge duration will be shortened.

When the terminals are not clean or when the battery pack has not been used for a long time, repeatedly install and remove the battery pack a few times. This improves the contact condition. Also, wipe the +, – and C terminals with a soft cloth or paper.

Be sure to observe the following

- Keep the battery pack away from fire.
- Keep the battery pack dry.
- Do not open nor try to disassemble the battery pack.
- Do not expose the battery pack to any mechanical shock.

Примечания к зарядке

Совершенно новый батарейный блок

Совершенно новый батарейный блок не заряжен. Перед использованием батарейного блока полностью зарядите его.

Подзаряжайте батарейный блок, когда Вы хотите

Вам не нужно разряжать его перед подзарядкой. Если Вы полностью зарядили батарейный блок, но не использовали его длительное время, то он разрядится. Тогда зарядите батарейный блок перед использованием.

Примечания к контактам

Если контакты (металлические части на задней стороне) загрязнены, то продолжительность действия батарейного блока будет сокращена.

Когда контакты загрязнены, или если батарейный блок не был использован в течение длительного времени, повторите установку и снятие батарейного блока несколько раз. Это улучшает состояние контакта. Также протрите контакты +, – и C мягкой тканью или бумагой.

Обязательно соблюдайте следующее

- Храните батарейный блок подальше от огня.
- Храните батарейный блок сухим.
- Не пытайтесь открыть или разобрать батарейный блок.
- Не подвергайте батарейный блок никаким механическим ударам.

Maintenance information and precautions

Информация по уходу за аппаратом и предосторожности

Moisture condensation

If the camcorder is brought directly from a cold place to a warm place, moisture may condense inside the camcorder, on the surface of the tape, or on the lens. In this condition, the tape may stick to the head drum and be damaged or the camcorder may not operate correctly. To prevent possible damage under these circumstances, the camcorder is furnished with moisture sensors. Take the following precautions.

Inside the camcorder

If there is moisture inside the camcorder, the beep sounds and the ◘ indicator flashes. If this happens, none of the function except cassette ejection will work. Open the cassette compartment, turn off the camcorder, and leave it about 1 hour. When ⏏ indicator flashes at the same time, the cassette is inserted in the camcorder. Eject the cassette, turn off the camcorder, and leave also the cassette about 1 hour.

On the lens

If moisture condenses on the lens, no indicator appears, but the picture becomes dim. Turn off the power and do not use the camcorder for about 1 hour.

How to prevent moisture condensation

When bringing the camcorder from a cold place to a warm place, put the camcorder in a plastic bag and allow it to adapt to room conditions over a period of time.

(1) Be sure to tightly seal the plastic bag containing the camcorder.

(2) Remove the bag when the air temperature inside it has reached the temperature surrounding it (after about 1 hour).

Конденсация влаги

Если видеокамера принесена прямо из холодного места в теплое место, влага может сконденсироваться внури видеокамеры, на поверхности ленты или на объективе. В таком состоянии лента может прилипнуть к барабану головки и будет повреждена, или видеокамера не сможет работать правильно. Для предотвращения возможного повреждения ввиду таких обстоятельств, видеокамера снабжена датчиками влаги. Соблюдайте следующие предосторожности.

Внутри видеокамеры

Если внутри видеокамеры произошла конденсация влаги, то будет звучать зуммерный сигнал, и индикатор ◘ будет мигать. Если это случилось, то никакие функции, кроме выталкивания кассеты, не будут работать. Откройте кассетный отсек, выключите видеокамеру и оставьте ее приблизительно на 1 час. Если индикатор ⏏ будет мигать в то же самое время, то значит кассета вставлена в видеокамеру. Вытолкните кассету, выключите видеокамеру и оставьте кассету также приблизительно на 1 час.

На объективе

Если влага сконденсировалась на объективе, никакие индикаторы появляться не будут, но изображение станет тусклым. Выключите питание и не ипользуйте видеокамеру приблизительно 1 час.

Как предотвратить конденсацию влаги

Если видеокамера принесена из холодного места в теплое место, то положите видеокамеру в полиэтиленовый пакет и дайте ей адаптироваться к комнатным условиям за некоторый период времени.

(1) Обязательно плотно закройте полиэтиленовый пакет, содержащий камеру.

(2) Выньте камеру, когда температура воздуха внутри пакета достигнет температуры окружающего воздуха (приблизительно через 1 час).

Video head cleaning

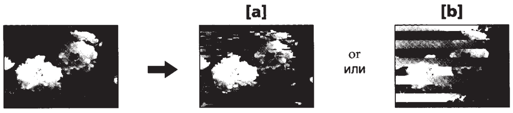
To ensure normal recording and clear pictures, clean the video heads.
The video heads may be dirty when:

- mosaic-pattern noise appears on the playback picture
- playback pictures do not move
- playback pictures are hardly visible
- playback pictures do not appear
- the ⊗ indicator and "▣ CLEANING CASSETTE" message appear one after another or the ⊗ indicator flashes on the LCD screen or in the viewfinder

Очистка видеоголовок

Для обеспечения нормальной записи и четкого изображения очищайте видеоголовки.
Видеоголовки наверное загрязнены, когда:

- Мозаичная структурная помеха появляется на воспроизводимом изображении
- Воспроизводимые изображения не перемещаются
- Воспроизводимое изображение труднопросматриваемое
- Воспроизводимое изображение не появляется
- Индикатор ⊗ и сообщение "▣ CLEANING CASSETE" появляются друг за другом или ⊗ индикатор мигает на экране ЖКД или в видоискателе



If **[a]** or **[b]** happens, clean the video heads with the Sony DVM12CL cleaning cassette (not supplied). Check the picture and if the above problem persists, repeat cleaning. (Do not repeat cleaning more than 5 times in one session.)

Note

If the DVM12CL cleaning cassette (not supplied) is not available in your area, consult your nearest Sony dealer.

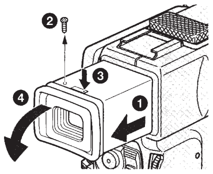
Если случится **[a]** или **[b]**, очистите видеоголовки с помощью очистительной кассеты Sony DVM12CL (не прилагается). Проверьте изображение и, если вышеуказанная проблема все еще существует, повторите очистку. (Не повторяйте очистку более 5 раз за один прием.)

Примечание

Если очистительная кассета DVM12CL (не прилагается) не имеется в продаже в Вашей области, проконсультируйтесь у Вашего ближайшего дилера Sony.

Removing dust from inside the viewfinder

(1) Pull out the viewfinder ❶.
Remove the screw ❷ with a screwdriver (not supplied).
While pressing the right side of the catch ❸ using a sharp-pointed object, remove the eyecup ❹.



(2) Remove dust from inside the eyecup and viewfinder with a commercially available blower.

(3) In the reverse way of **(1)**, attach the eyecup. Then replace the screw ❷.

Precautions

Camcorder operation

- Operate the camcorder on 3.6 V (battery pack) or 4.2 V (AC power adaptor).
- Should any solid object or liquid get inside the casing, unplug the camcorder and have it checked by Sony dealer before operating it any further.
- Avoid rough handling or mechanical shock. Be particularly careful of the lens.
- Keep the POWER switch set to OFF when not using the camcorder.
- Do not wrap up the camcorder and operate it since heat may build up internally.
- Keep the camcorder away from strong magnetic fields or mechanical vibration.
- Do not push the LCD screen.
- If the camcorder is used in a cold place, a residual image may appear on the LCD screen. This is not a mulfunction.
- While using the camcorder, the back of the LCD screen may heat up. This is not a mulfunction.

Удаление пыли из внутренней части видоискателя

(1) Вытащите видоискатель ❶.
Удалите винт ❷ с помощью отвертки (не прилагается).
Нажимая правую сторону фиксатора ❸ с помощью заостренного предмета, снимите окуляр ❹.

(2) Удалите пыль из внутренней части окуляра и видоискателя с помощью имеющейся в продаже воздуходувки.

(3) В обратном поряде действий пункта **(1)** прикрепите окуляр. Затем установите на место винт ❷.

Предосторожности

Эксплуатация видеокамеры

- Эксплуатируйте видеокамеру от 3,6 В (батарейный блок) или 4,2 В (сетевой адаптер перем. тока).
- Если какиой-нибудь твердый предмет или жидкость попали в корпус, то выключите видеокамеру и проверьте ее у дилера Sony перед дальнейшей ее эксплуатацией.
- Избегайте грубого обращения или механических ударов. Будьте особенно остнорожны с объективом.
- Держите выключатель POWER в положении OFF, когда видеокамера не используется.
- Не заворачивайте видеокамеру и не эксплуатируйте ее в таком состоянии, так как может произойти внутреннее повышение температуры.
- Держите видеокамеру подальше от сильных магнитных полей или механической вибрации.
- Не нажимайте на экран ЖКД.
- Если видеокамера используется в холодном месте, то послеизображения могут появляться на экране ЖКД. Это не является неисправностью.
- Во время использования видеокамеры тыльная часть экрана ЖКД может нагреться. Это не является неисправностью.

On handling tapes

- Do not insert anything in the small holes on the cassette.
- Do not open the tape protect cover or touch the tape.
- Avoid touching or damaging the terminals. To remove dust, clean the terminals with a soft cloth.

Camcorder care

- When the camcorder is not to be used for a long time, disconnect the power source and remove the cassette. Periodically turn on the power, operate the camera and VTR sections and play back a tape for about 3 minutes.
- Clean the lens with a soft brush to remove dust. If there are fingerprints on the lens, remove them with a soft cloth.
- Clean the camcorder body with a dry soft cloth, or a soft cloth lightly moistened with a mild detergent solution. Do not use any type of solvent which may damage the finish.
- Do not let sand get into the camcorder. When you use the camcorder on a sandy beach or in a dusty place, protect it from the sand or dust. Sand or dust may cause the unit to malfunction, and sometimes this malfunction cannot be repaired.

AC power adaptor

Charging

- Use only a lithium ion type battery pack.
- Place the battery pack on a flat surface without vibration during charging.
- The battery pack will get hot during charging. This is normal.

Others

- Unplug the unit from the mains when not in use for a long time. To disconnect the mains lead, pull it out by the plug. Never pull the cord itself.
- Do not operate the unit with a damaged cord or if the unit has been dropped or damaged.
- Do not bend the mains lead forcibly, or put a heavy object on it. This will damage the cord and may cause a fire or an electrical shock.

Относительно обращения с лентами

- Не вставляйте ничего в маленькие отверстия на задней стороне кассеты.
- Не открывайте защитную крышку ленты и не трогайте ленту.
- Избегайте прикосновения к контактам. Для удаления пыли очищайте контакты с помощью мягкой ткани.

Уход за видеокамерой

- Когда видеокамера не используется в течение длительного времени, отсоедините источник питания и удалите кассету. Периодически включайте питание, работайте с секциями камеры и ВМФ и воспроизводите ленту приблизительно в течение 3-х минут.
- Очищайте объектив с помощью мягкой кисточки для удаления грязи. Если имеются отпечатки пальцев на объективе, то удалите их с помощью мягкой ткани.
- Очищайте корпус аппарата с помощью сухой мягкой ткани или мягкой ткани, слекга смоченной раствором умеренного моющего средства. Не используйте каких-либо типов растворителей, которые могут повредить отделку.
- Не позволяйте песку попасть в видеокамеру. Когда Вы используете видеокамеру на песчаном пляже или в пыльном месте, предохраняйте ее от песка и пыли. Песок и пыль могут вызвать неисправность аппарата, и иногда такая неисправность может не подлежать ремонту.

Сетевой адаптер перем. тока

Зарядка

- Используйте только литиево-ионный тип батарейного блока.
- Разместите батарейный блок на плоской поверхности без вибрации во время зарядки.
- Батарейный блок будет нагреваться во время зарядки. Это является нормальным.

Прочее

- Отсоедините аппарат от электрической сети, если он не используется длительное время. Для отсоединения сетевого провода вытащите его за разъем. Никогда не тяните за сам провод.
- Не эксплуатируйте аппарат с поврежденным проводом, или если аппарат упал или был поврежден.
- Не сгибайте сетевой провод силой и не ставьте на него тяжелые предметы. Это повредит провод и может привести к пожару или удару электрическим током.

Maintenance information and precautions

- Be sure that nothing metallic comes into contact with the metal parts of the connecting plate. If this happens, a short may occur and the unit may be damaged.
- Always keep the metal contacts clean.
- Do not disassemble the unit.
- Do not apply mechanical shock or drop the unit.
- While the unit is in use, particularly during charging, keep it away from AM receivers and video equipment because it will disturb AM reception and video operation.
- The unit becomes warm while in use. This is normal.
- Do not place the unit in locations that are:
  - Extremely hot or cold
  - Dusty or dirty
  - Very humid
  - Vibrating

Note on dry batteries

To avoid possible damage from battery leakage or corrosion, observe the following.

- Be sure to insert the batteries in the correct direction.
- Dry batteries are not rechargeable.
- Do not use a combination of new and old batteries.
- Do not use different types of batteries.
- The batteries slowly discharge while not in use.
- Do not use a battery that is leaking.

If battery leakage occurred

- Wipe off the liquid in the battery case carefully before replacing the batteries.
- If you touch the liquid, wash it off with water.
- If the liquid get into your eyes, wash your eyes with a lot of water and then consult a doctor.

If any difficulty should arise, unplug the unit and contact your nearest Sony dealer.

Информация по уходу за аппаратом и предосторожности

- Убедитесь, что никакие металлические предметы не соприкасаются с металлическими частями соединительной пластины. Если это случится, может произойти короткое замыкание, и аппарат может быть поврежден.
- Всегда поддерживайте металлические контакты в чистоте.
- Не разбирайте аппарат.
- Не подвергайте аппарат механической вибрации и не роняйте его.
- Когда аппарат используется, особенно во время зарядки, держите его подальше от радиоприемников АМ и видеоаппаратуры, потому что он будет нарушать прием АМ и работу видеоаппаратуры.
- Аппарат становится теплым во время использования. Это является нормальным.
- Не размещайте аппарат в местах, которые:
  - Чрезмерно жаркие или холодные
  - Пыльные или грязные
  - Очень влажные
  - Подвержены вибрации

Примечания к сухим батарейкам

Во избежание возможного повреждения из-за протечки батареек или корроизии соблюдайте следующее.

- Обязательно вставьте батарейки с правильным направлением.
- Сухие батарейки не являются перезаряжаемыми.
- Не используйте комбинацию старых и новых батареек.
- Не используйте различные типы батареек.
- Батарейки медленно разряжаются, даже если не используются.
- Не используйте батарейку, которая протекла.

Если случится протечка батареек

- Тщательно вытрите жидкость в батарейном отсеке перед установкой батареек.
- Если Вы дотронетесь до жидкости, то промойте это место водой.
- Если жидкость попала Вам в глаза, то промойте Ваши глаза большим количеством воды, а затем обратитесь к врачу.

В случае возникновения каких-либо трудностей, отключите аппарат и обратитесь к Вашему ближайшему дилеру Sony.

Using your camcorder abroad

Each country or area has its own electric and TV colour systems. Before using your camcorder abroad, check the following points.

Power sources

You can use your camcorder in any country or area with the supplied AC power adaptor within 100 V to 240 V AC, 50/60 Hz.

Difference in colour systems

This camcorder is a PAL system-based camcorder. If you want to view the playback picture on a TV, it must be a PAL system-based TV.
Check the following list.

PAL system
Australia, Austria, Belgium, China, Czech Republic, Denmark, Finland, Germany, Great Britain, Holland, Hong Kong, Italy, Kuwait, Malaysia, New Zealand, Norway, Portugal, Singapore, Slovak Republic, Spain, Sweden, Switzerland, Thailand, etc.

PAL-M system
Brazil

PAL-N system
Argentina, Paraguay, Uruguay

NTSC system
Bahama Islands, Bolivia, Canada, Central America, Chile, Colombia, Ecuador, Jamaica, Japan, Korea, Mexico, Peru, Surinam, Taiwan, the Philippines, the U.S.A., Venezuela, etc.

SECAM system
Bulgaria, France, Guiana, Hungary, Iran, Iraq, Monaco, Poland, Russia, Ukraine, etc.

Использование Вашей видеокамеры за границей

Каждая страна имеет свои собственные системы электрической сети и цветного телевидения. Перед использованием Вашей видеокамеры за границей проверьте следующие пункты.

Источники питания

Вы можете использовать видеокамеру в любой стране с помощью прилагаемого сетевого адаптера перем. тока в пределах от 100 В до 240 В перем. тока, 50/60 Гц.

Различия в системах цветного телевидения

Данная видеокамера основана на системе PAL. Если Вы хотите просмотреть восроизводимое изображение на телевизоре, то это должен быть телевизор, основанный на системе PAL.
Проверьте по следюующему перечню.

Система PAL
Австралия, Австрия, Бельгия, Великобритания, Германия, Голландия, Гонконг, Дания, Испания, Италия, Китай, Кувейт, Малайзия, Новая Зеландия, Норвегия, Португалия, Сингапур, Словацкая Республика, Тайланд, Финляндия, Чешская Республика, Швейцария, Швеция и т.д.

Система PAL-M
Бразилия

Система PAL-N
Аргентина, Парагвай, Уругвай

Система NTSC
Багамские острова, Боливия, Венесуэла, Канада, Колумбия, Корея, Мексика, Перу, Суринам, США, Тайвань, филиппины, Центральная Америка, Чили, Эквадор, Ямайка, Япония и т.д.

Система SECAM
Болгария, Венгрия, Гайяна, Ирак, Иран, Монако, Польша, Россия, Украина, Франция и т.д.

English

Trouble check

If you run into any problem using the camcorder, use the following table to troubleshoot the problem. Should the difficulty persist, disconnect the power source and contact your Sony dealer or local authorized Sony service facility.

Camcorder

Power

Symptom	Cause and/or corrective actions
The power is not on.	• The battery pack is not installed. → Install the battery pack. (p. 11) • The battery is dead. → Use a charged battery pack. (p. 8) • The AC power adaptor is not connected to mains. → Connect the AC power adaptor to mains. (p. 31)
The power goes off.	• While being operated in CAMERA mode, the camcorder has been in Standby mode for more than 5 minutes. → Set the POWER switch to OFF, then to CAMERA. (p. 14) • The battery is dead. → Use a charged battery pack. (p. 8)
The battery pack is quickly discharged.	• The ambient temperature is too low. (p. 95) • The battery pack has not been charged fully. → Charge the battery pack again. (p. 8) • The battery pack is completely dead, and cannot be recharged. → Use another battery pack. (p. 31)
The battery pack cannot be installed.	• Only an NP-F10/NP-F20/NP-F30 battery pack can be used.

Operation

Symptom	Cause and/or corrective actions
START/STOP does not operate.	• The tape is stuck to the drum. → Eject the cassette. (p. 12) • The tape has run out. → Rewind the tape or use a new one. (p. 26) • The POWER switch is set to VTR. → Set it to CAMERA. (p. 14) • The tab on the cassette is out (red). → Use a new cassette or slide the tab. (p. 13)
The cassette cannot be removed from the holder.	• The battery is dead. → Use a charged battery pack or the AC power adaptor. (p. 8, 31)
▣ and ⏏ indicators flash and no function except for cassette ejection works.	• Moisture condensation has occurred. → Remove the cassette and leave the camcorder for at least 1 hour. (p. 100)
"CLOCK SET" appears when the camcorder is turned on.	• Reset the date and time. (p. 92)
The End Search function does not activate.	• You have not recorded on the new cassette yet. • The tape without cassette memory was ejected after recording.

Trouble check

Operation

Symptom	Cause and/or corrective actions
The tape does not move when a tape transport button is pressed.	• The POWER switch is set to CAMERA or OFF. → Set it to VTR. (p. 26) • The tape has run out. → Rewind the tape or use a new one. (p. 26)
No sound or only a low sound is heard when playing back a tape.	• The volume is turned to the minimum. → Open the LCD panel and press VOLUME +. (p. 26) • AUDIO MIX is set to ST2 side in the menu system. → Adjust AUDIO MIX in the menu system (p. 33, 88).
The new sound added to the recorded tape is not heard.	• AUDIO MIX is set to ST1 side in the menu system. → Adjust AUDIO MIX in the menu system (p. 33, 88).
The SteadyShot function does not activate.	• STEADYSHOT is set to OFF in the menu system. → Set it to ON. (p. 33)
Recording stops in a few seconds.	• The START/STOP MODE switch is set to **5SEC** or ⊥ ANTI GROUND SHOOTING. → Set it to ⧖. (p. 19)
The autofocus function does not activate.	• Focus is set to the manual mode. → Set it to autofocus. (p. 60) • Shooting conditions are not suitable for autofocus. → Set focus to manual mode to focus manually. (p. 60)
The fader function does not work.	• The START/STOP MODE switch is set to **5SEC** or ⊥ ANTI GROUND SHOOTING. → Set it to ⧖. (p. 19) • The digital effect function is working. → Cancel it. (p. 47)
The title is not displayed.	• TITLE DISP is set to OFF in the menu system. → Set it to ON in the menu system. (p. 33)
The title is not recorded.	• The tape has no cassette memory. → Use a tape with cassette memory. (p. 61) • The cassette memory is full. → Erase another title. (p. 65) • The tape is set to prevent accidental erasure. → Slide the protect tab so that red portion is not visible. (p. 13) • Nothing is recorded in that position on the tape. → Superimpose the title to the recorded position. (p. 61)
The cassette label is not recorded.	• The tape has no cassette memory. → Use a tape with cassette memory. (p. 68) • The cassette memory is full. → Erase some titles. (p. 65) • The tape is set to prevent accidental erasure. → Slide the protect tab so that red portion is not visible. (p. 13)
Displaying the recorded date, date search function does not work.	• The tape has no cassette memory. → Use a tape with cassette memory. (p. 72) • CM SEARCH is set to OFF in the menu system. → Set it to ON. (p. 33)

Continued to the next page

Trouble check

Operation

Symptom	Cause and/or corrective actions
The title search function does not work.	• The tape has no cassette memory. ➔ Use a tape with cassette memory. (p. 75) • CM SEARCH is set to OFF in the menu system. ➔ Set it to ON. (p. 33) • There is no title in the tape. ➔ Superimpose the titles. (p. 61)
C/I/I indicator does not appear when using a tape with cassette memory.	• The gold-plated connector of the tape is dirty or dusty. ➔ Clean the gold-plated connector. (p. 91)
The Date Search, Title Search, or End Search does not work correctly.	• The tape has a blank portion in the recorded portion. (p. 89)

Picture

Symptom	Cause and/or corrective actions
The image on the viewfinder screen is not clear.	• The viewfinder lens is not adjusted. ➔ Adjust the viewfinder lens. (p. 15)
The picture is not clear or does not appear.	• The television's video channel is not adjusted correctly. ➔ Adjust it.
A vertical band appears when a subject such as lights or a candle flame is shot against a dark background.	• The contrast between the subject and background is too high. The camcorder is not malfunctioning. ➔ Change locations.
The picture is "noisy" or does not appear.	• The video heads may be dirty. ➔ Clean the heads using the Sony DVM12CL cleaning cassette (not supplied). (p. 101)
⊗ indicator flashes on the LCD screen or in the viewfinder.	• The video heads may be dirty. ➔ Clean the heads using the Sony DVM12CL cleaning cassette (not supplied). (p. 101)
The picture is too bright or too dark.	• LCD BRIGHT is not adjusted properly. ➔ Press + or – to obtain the brightness you want. (p. 20) • The exposure adjustment is set to manual mode. ➔ Set it to aumomatic exposure mode. (p. 55)
A vertical band appears when shooting a very bright subject.	• The camcorder is not malfunctioning.
A horizontal band appears when shooting a TV screen or computer screen.	• Set STEADYSHOT in the menu system to OFF. (P. 33)
The picture does not appear in the viewfinder.	• The LCD panel is open. ➔ Close the LCD panel. • The viewfinder is not fully pulled out. ➔ Pull it out until it clicks. (p. 14)
The picture does not appear on the LCD screen or in the viewfinder.	• The picture disappears when you insert or eject a cassette. (The power lamp fashes.) The camcorder is not malfunctioning.
An unknown picture is displayed on the LCD screen or in the viewfinder.	• If 10 minutes elapse after you set the POWER switch to CAMERA without inserting a cassette, the camcorder automatically starts the demonstration or DEMO MODE is set to STBY/ON in the menu system. ➔ Insert the cassette and the demonstration stops. You can deactivate the demonstration. (p. 37)

Trouble check

Picture

Symptom	Cause and/or corrective actions
The picture appears a little later on the LCD screen or in the viewfinder when you set the POWER switch to CAMERA.	• The camcorder is not malfunctioning.
A display such as "C:□□:□□" appears on the LCD screen or in the viewfinder.	• The self-diagnosis display function has activated. ➔ Check the code and diagnosis the problem by refering to the code chart. (p. 111)

Others

Symptom	Cause and/or corrective actions
While editing using the DV connecting cable, recording picture cannot be monitored.	• Remove the DV connecting cable, and connect it again.
The camcorder becomes warm.	• If the power of the cammcorder is on for a long time, it becomes warm, which is not malfunction.
The supplied Remote Commander does not work.	• COMMANDER is set to OFF in the menu system. ➔ Set it to ON. (p. 33) • Something is blocking the infrared rays. ➔ Remove the obstacle. • The battery is not inserted with the correct polarity. ➔ Insert the battery with the correct polarity. (p. 126) • The batteries are dead. ➔ Insert new ones. (p. 126)
No function works though the power is on.	• Disconnect the battery pack or the connecting plate of the AC power adaptor, then reconnect it after about 1 minute. Turn the power on. If the functions still do not work, press the RESET button at the upper right from the START/STOP MODE switch using a sharp-pointed object. (If you press the RESET button, all the settings including the date and time return to the default.) (p. 123)

AC power adaptor

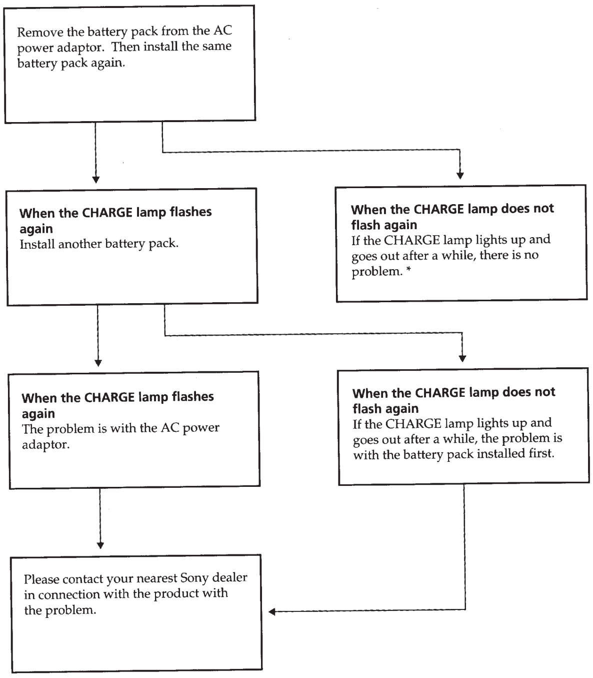
Symptom	Corrective actions
The VTR/CAMERA or CHARGE lamp does not light.	• Disconnect the mains lead. After about 1 minute, reconnect the mains lead. (p. 8)
The CHARGE lamp flashes.	• See the chart on the next page.

Continued to the next page

Trouble check

When the CHARGE lamp flashes

Check through the following chart.



Remove the battery pack from the AC power adaptor. Then install the same battery pack again.

When the CHARGE lamp flashes again
Install another battery pack.

When the CHARGE lamp does not flash again
If the CHARGE lamp lights up and goes out after a while, there is no problem. *

When the CHARGE lamp flashes again
The problem is with the AC power adaptor.

When the CHARGE lamp does not flash again
If the CHARGE lamp lights up and goes out after a while, the problem is with the battery pack installed first.

Please contact your nearest Sony dealer in connection with the product with the problem.

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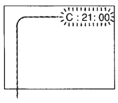
* If you use a battery pack which you have just bought or which has been left unused for a long time, the CHARGE lamp may flash at the first charging. This does not indicate a problem. Repeat again to charge with same battery pack.

English

Self-diagnosis function

The camcorder has a self-diagnosis display. This function displays the camcorder's condition with five digits (a combination of a letter and figures) on the LCD screen or in the viewfinder. If this occurs, check the following code chart. The five-digit display informs you of the camcorder's current condition. The last two digits (indicated by □□) will differ depending on the state of the camcorder.

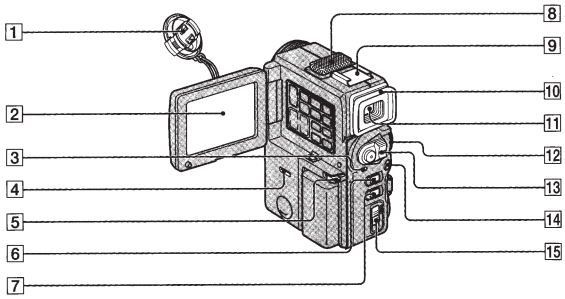
LCD screen/viewfinder



Self-diagnosis display
- C:□□:□□
  You can service the camcorder yourself.
- E:□□:□□
  Contact your Sony dealer or local authorized Sony facility.

Five-digit display	Cause and/or corrective actions
C:21:□□	• Moisture condensation has occurred. ➔ Remove the cassette and leave the camcorder for at least 1 hour. (p. 100)
C:22:□□	• The video heads are dirty. ➔ Clean the heads using the Sony DVM12CL cleaning cassette (not supplied). (p. 101)
C:31:□□ C:32:□□	• A serviciable situation not malfunctioned above has occurred. ➔ Remove the cassette and insert it again, then operate the camcorder. (p. 12) ➔ Disconnect the mains lead of the AC power adaptor or remove the battery pack. After reconnecting the power source, operate the camcorder.
C:04:□□	• The battery pack being used is not the "InfoLITHIUM" battery pack. ➔ Use the "InfoLITHIUM" battery pack. (p. 31)
E:61:□□ E:62:□□	• A camcorder malfunction which you cannot service has occurred. ➔ Contact your Sony dealer or local authorized Sony service facility and inform them of the five digits. (example: E:61:10)

If you are unable to resolve the problem, contact your Sony dealer or local authorized Sony service facility.



1 **Lens cap** (p. 14)

2 **LCD screen** (p. 20)

3 **Power lamp** (p. 14, 26)

4 **Speaker**

5 **OPEN button** (p. 20)

6 **FADER button** (p. 42)

7 **BACK LIGHT button** (p. 54)

8 **Built-in microphone**

9 **Accessory shoe** (p. 40)

10 **Eyecup**

11 **Viewfinder** (p. 14)

12 **Control dial** (p. 33)

13 **POWER switch** (p. 14, 26)

14 **EXPOSURE button** (p. 55)

15 **≜ OPEN/EJECT lever** (p. 12)

1 **Крышка объектива** (стр. 14)

2 **Экран ЖКД** (стр. 20)

3 **Лампочка питания** (стр. 14, 26)

4 **Громкоговоритель**

5 **Кнопка OPEN** (стр. 20)

6 **Кнопка FADER** (стр. 42)

7 **Кнопка BACK LIGHT** (стр. 54)

8 **Встроенный микрофон**

9 **Башмак для вспомогательного оборудования** (стр. 40)

10 **Окуляр**

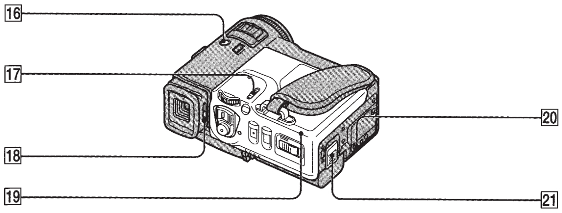
11 **Видоискатель** (стр. 14)

12 **Регулировочный диск** (стр. 33)

13 **Выключатель POWER** (стр. 14, 26)

14 **Кнопка EXPOSURE** (стр. 55)

15 **Рычаг ≜ OPEN/EJECT** (стр. 12)



16 **PHOTO button** (p. 39)

17 **START/STOP MODE swtich** (p. 19)

18 **Viewfinder lens adjustment lever** (p. 15)

19 **Cassette lid** (p. 12)

20 **Tripod receptacle** (p. 24)
Make sure that the length of the tripod screw is less than 6.5 mm.
Otherwise, you cannot attach the tripod securely and the screw may damage the camcorder.

21 **BATT(battery) RELEASE lever** (p. 11)

16 **Кнопка PHOTO** (стр. 39)

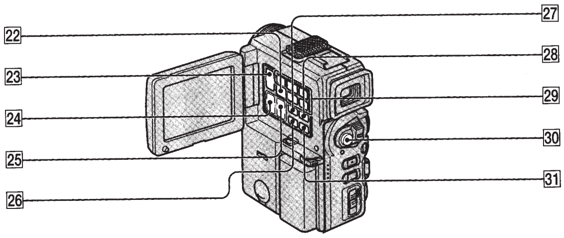
17 **Переключатель START/STOP MODE** (стр. 19)

18 **Рычаг регулировки объектива видоискателя** (стр. 15)

19 **Крышка кассеты** (стр. 12)

20 **Держатель треноги** (стр. 24)
Убедитесь, что длина винта треноги менее 6,5 мм.
В противном случае Вы не сможете надержно подсоединить треногу, а винт может повредить видеокамеру.

21 **Рычаг BATT (батаейного блока) RELEASE** (стр. 11)



22 **END SEARCH button** (p. 25, 30)

23 **EDIT SEARCH buttons** (p. 25)

24 **LCD BRIGHT buttons** (p. 20, 26)

25 **VOLUME buttons** (p. 26)

26 **DISPLAY button** (p. 27)

27 **DIGITAL EFFECT button** (p. 47)

28 **MENU button** (p. 33)

29 **Tape operation buttons** (p. 26)
  ■ STOP (stop)
  ◀◀ REW (rewind)
  ► PLAY (playback)
  ▶▶ FF (fastforward)
  ❚❚ PAUSE (pause)

30 **START/STOP button** (p. 14)

31 **TITLE button** (p. 62)

22 **Кнопка END SEARCH** (стр. 25, 30)

23 **Кнопки EDIT SEARCH** (стр. 25)

24 **Кнопки LCD BRIGHT** (стр. 20, 26)

25 **Кнопки VOLUME** (стр. 26)

26 **Кнопка DISPLAY** (стр. 27)

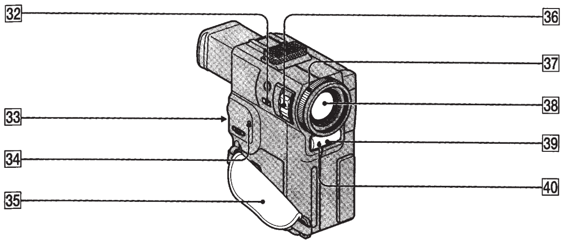
27 **Кнопка DIGITAL EFFECT** (стр. 47)

28 **Кнопка MENU** (стр. 33)

29 **Кнопки упрвления лентой** (стр. 26)
  ■ STOP (остановка)
  ◀◀ REW (ускоренная перемотка назад)
  ► PLAY (воспроизведение)
  ▶▶ FF (ускоренная перемотка вперед)
  ❚❚ PAUSE (пауза)

30 **Кнопка START/STOP** (стр. 14)

31 **Кнопка TITLE** (стр. 62)



32 **FOCUS button** (p. 60)

33 **Cassette compartment** (p. 12)

34 **RESET button** (p. 109)

35 **Grip strap** (p. 23)

36 **Zoom lever** (p. 17)

37 **Focus ring** (p. 60)

38 **Lens**

39 **Remote sensor** (p. 126)
Aim the Remote Commander here for remote control.

40 **Recording lamp** (p. 14)

32 **Кнопка FOCUS** (стр. 60)

33 **Кассетный отсек** (стр. 12)

34 **Кнопка RESET** (стр. 115)

35 **Ременной захват** (стр. 23)

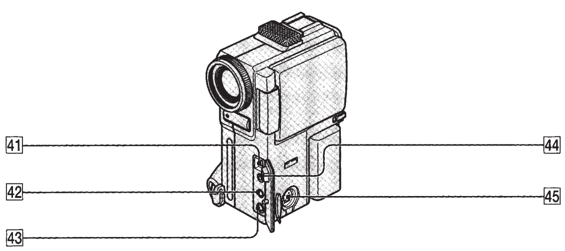
36 **Рычаг трансфокатора** (стр. 17)

37 **Кольцо фокусироввки** (стр. 60)

38 **Объектив**

39 **Дистанционный датчик** (стр. 126)
Нацельте пульт дистанционного управления сюда для дистанционного контроля.

40 **Лампочка записи** (стр. 14)



41 DV IN/OUT jack (p. 82)

This "i.LINK" mark is a trademark of Sony Corporation and indicates that this product is in agreement with IEEE 1394-1995 specifications and their revisions.

The DV IN/OUT jack is i.LINK compatible.

42 MIC jack (PLUG IN POWER) (p. 86)
Connect an external microphone (not supplied). This jack also accepts a "plug-in-power" microphone.

43 AUDIO VIDEO OUT/∩ (headphones) jack (p. 27, 70, 83)

44 LANC Ⓛ control jack
Ⓛ stands for Local Application Control Bus System. The Ⓛ control jack is used for controlling the tape transport of video equipment and peripherals connected to it. This jack has the same function as the jack indicated as CONTROL L or REMOTE.

45 S VIDEO OUT jack (p. 70, 83)

41 Гнездо DV IN/OUT (стр. 82)

Этот знак "i.LINK" является торговой маркой корпорации Sony и означает, что данное изделие соответствует техническим характеристикам IEEE 1394-1995 и дополнениям к ним.

Гнездо DV IN/OUT является совместимым с i.LINK.

42 Гнездо MIC (PLUG IN POWER) (стр. 86)
Подсоедините внешний микрофон (не прилагается). Данное гнездо также принимает "подключаемый к питанию" микрофон.

43 Гнездо AUDIO VIDEO OUT/∩ (головных телефонов) (стр. 27, 70, 83)

44 Гнездо управления LANC Ⓛ
Ⓛ означает систему канала местного управления. Гнездо управления Ⓛ используется для контроля за перемещением ленты видеооборудования и периферийных устройств, подключенных к нему. Данное гнездо имеет такую же функцию, как и разъемы, обозначенные как CONTROL L или REMOTE.

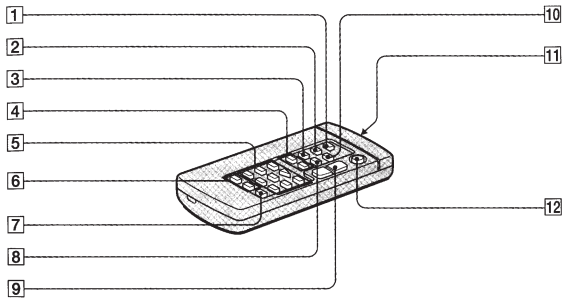
45 Гнездо S VIDEO OUT (стр. 70, 83)

Remote Commander

The buttons that have the same name on the Remote Commander as on the camcorder function identically.

Пульт дистанционного управления

Кнопки пульта дистанционного упрвления, которые имеют одинаковые наименования с кнопками на видеокамере, функционируют идентично.



1 **PHOTO button** (p. 39)

2 **DISPLAY button** (p. 27)

3 **SEARCH MODE button** (p. 74, 75, 77)

4 **⏮/⏭ buttons** (p. 74, 75, 77)

5 **Tape transport buttons** (p. 26)

6 **Recording buttons** (p. 85)

7 **AUDIO DUB button** (p. 87)

8 **DATA CODE button** (p. 81)

9 **Power zoom button** (p. 17)

10 **ZERO SET MEMORY button** (p. 80)

11 **Transmitter**
Point toward the remote sensor to control the camcorder after turning on the camcorder.

12 **START/STOP button** (p. 14)

1 **Кнопка PHOTO** (стр. 39)

2 **Кнопка DISPLAY** (стр. 27)

3 **Кнопка SEARCH MODE** (стр. 74, 75, 77)

4 **Кнопки ⏮/⏭** (стр. 74, 75, 77)

5 **Кнопки перемещения ленты** (стр. 26)

6 **Кнопки записи** (стр. 85)

7 **Кнопка AUDIO DUB** (стр. 87)

8 **Кнопка DATA CODE** (стр. 81)

9 **Кнопка приводного трансфокатора** (стр. 17)

10 **Кнопка ZERO SET MEMORY** (стр. 80)

11 **Передатчик**
Нацельте в направлении дистанционного датчика для управления видеокамерой после ее включения.

12 **Кнопка START/STOP** (стр. 14)

To prepare the Remote Commander

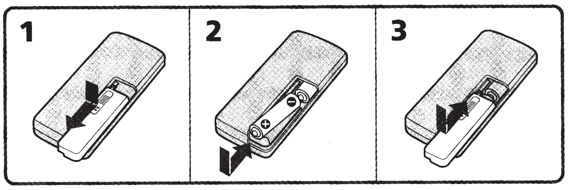
To use the Remote Commander, you must insert two R6 (size AA) batteries. Use the supplied R6 (size AA) batteries.

(1) Remove the battery cover from the Remote Commander.
(2) Insert both of the R6 (size AA) batteries with correct polarity.
(3) Put the battery cover back onto the Remote Commander.

Для подготовки пульта дистанционного управления

Для использования пульта дистанционного управления Вы должны вставить две батарейки R6 (размером AA). Используйте прилагаемые батарейки R6 (размером AA).

(1) Снимите батарейную крышку с пульта дистанционного управления.
(2) Вставьте обе батарейки R6 (размером AA) с правильной полярностью.
(3) Обратно установите батарейную крышку на пульт дистанционного управления.



Note on battery life
The batteries for the Remote Commander last about 6 months under normal operation. When the batteries become weak or dead, the Remote Commander does not work.

To avoid damage from possible battery leakage
Remove the batteries when you will not use the Remote Commander for a long time.

Remote control direction

Aim the Remote Commander to the remote sensor.
The operative range of the Remote Commander is about 5 m indoors. Depending on the angle, Remote Commander may not activate the camcorder.

Примечание к сроку службы батареек
Батареек для пульта дистанционного управления хватает приблизительно на 6 месяцев при нормальных условиях эксплуатации. Когда батарейки станут слабыми или полностью разрядятся, пульт дистанционного управления не будет работать.

Во избежание повреждения из-за возможной утечки из батареек
Удалите батарейки, если Вы не будете использовать пульт дистанционного управления в течение длительного времени.

Направление пульта дистанционного управления

Нацельте пульт дистанционного управления на дистанционный датчик.
Рабочий диапазон пульта дистанционного управления составляет около 5 м в помещении. В зависимости от угла использования пульт дистанционного управления может не действовать на видеокамеру.

Notes on the Remote Commander

- Keep the remote sensor away from strong light sources such as direct sunlight or illumination. Otherwise, the remote control may not be effective.
- Be sure that there is no obstacle between the remote sensor on the camcorder and the Remote Commander.
- This camcorder works in commander mode VTR 2. The commander modes (1, 2 and 3) are used to distinguish this camcorder from other Sony VCRs to avoid remote control misoperation. If you use another Sony VCR in commander mode VTR 2, we recommend you change the commander mode or cover the remote sensor of the VCR with black paper.

About the Carl Zeiss lens
This camcorder is equipped with a Carl Zeiss lens which can reproduce a fine image. The lens for this camcorder was developed jointly by Carl Zeiss, in Germany, and Sony Corporation. It adopts the MTF* measurement system for video camera and offers a quality as the Carl Zeiss lens.

* MTF is an abbreviation of Modulation Transfer Function/Factor.
The value number indicates the amount of light of a subject penetrating into the lens.

Примечания к пульту дистанционного управления

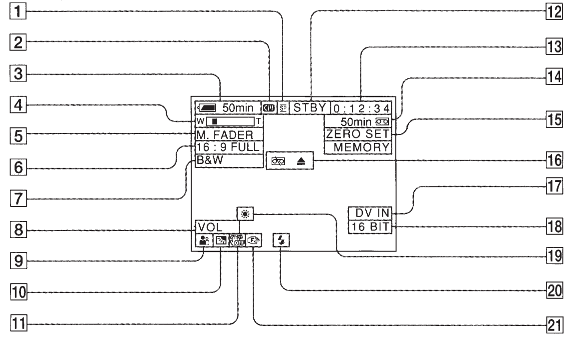
- Держите дистанционный датчик подальше от сильных источников света, как например, прямые солнечные лучи или иллюминация. В противном случае дистанционное управление может не действовать.
- Убедитесь, что между дистанционным датчиком на видеокамере и пультом дистанционного управления нет препятствия.
- Данная видеокамера работает в режиме пульта дистанционного управления VTR2. Режимы пульта дистанционного управления (1, 2 и 3) используются для отличия данной видеокамеры от других КВМ фирмы Sony во избежание неправильной работы дистанционного управления. Если Вы используете другой КВМ фирмы Sony, работающий в режиме VTR2, мы рекомендуем Вам изменить режим пульта дистанционного управления или закрыть дистанционный датчик КВМ черной бумагой.

Относительно объектива Карл Цейсс
Данная видеокамера оснащена объективом Карл Цейсс, который может производить превосходное изображение. Объектив для данной камеры был разработан фирмой Карл Цейсс в Германии совместно с корпорацией Sony. Он обладает измерительной системой MTF* и обеспечивает качество, характерное для объективов фирмы Карл Цейсс.

* MTF является сокращением от Modulation Transfer Function/Factor, что в переоде означает функция/фактор передачи модуляции.
Числовое значение указывает какое количество света от объекта попадает на объектив.

Operation indicators

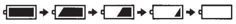
Рабочие индикаторы



1 **Recording mode indicator** (p. 15)/**Mirror mode indicator** (p. 21)

2 **Cassette Memory indicator** (p. 5)

3 **Remaining battery indicator** (p. 95)



4 **Zoom indicator** (p. 17)/**Exposure indicator** (p. 55)

5 **FADER indicator** (p. 42)/**DIGITAL EFFECT indicator** (p. 47)

6 **16:9WIDE indicator** (p. 45)

7 **PICTURE EFFECT indicator** (p. 46)

8 **VOL (volume) indicator** (p. 26)/**Data code indicator** (p. 81)

9 **PROGRAM AE indicator** (p. 57)

10 **BACK LIGHT indicator** (p. 54)

11 **Steady Shot off indicator** (p. 61)

12 **Recording standby mode indicator** (p. 14)/**Tape transport mode indicator** (p. 26)

1 **Индикатор режима записи** (стр. 15)/**Индикатор зеркального режима** (стр. 21)

2 **Индикатор кассетной памяти** (стр. 5)

3 **Индикатор оставшегося заряда батарейного блока** (стр. 95)

4 **Индикатор трансфокатора** (стр. 17)/**Индикатор экспозиции** (стр. 55)

5 **Индикатор FADER** (стр. 42)/**Индикатор DIGITAL EFFECT** (стр. 47)

6 **Индикатор 16:9 WIDE** (стр. 45)

7 **Индикатор PICTURE EFFECT** (стр. 46)

8 **Индикатор VOL (громкости)** (стр. 26)/**Индикатор кода данных** (стр. 81)

9 **Индикатор PROGRAM AE** (стр. 57)

10 **Индикатор BACK LIGHT** (стр. 54)

11 **Индикатор отключения устойчивой съемки** (стр. 61)

12 **Индикатор режима готовности записи** (стр. 14)/**Индикатор режима перемещения ленты** (стр. 26)

13 **Time code indicator** (p. 16)/**Self-diagnosis indicator** (p. 111)/**Photo mode indicator** (p. 39)/**5SEC mode indicator** (p. 19)

14 **Remaining tape indicator** (p. 17)

15 **ZERO SET MEMORY indicator** (p. 80)

16 **Warning indicators** (p. 130)

17 **DV IN indicator** (p. 83)

18 **Audio mode indicator** (p. 90)

19 **White balance indicator** (p. 56)

20 **Electric flash indicator** (p. 40)

21 **Manual focus indicator** (p. 60)

To watch the demonstration

You can watch a brief demonstration of pictures with special effects. If the demonstration appears when you turn on the camcorder for the first time, exit the demo mode to use your camcorder.

To enter demo mode

(1) Eject the cassette and set the POWER switch to VTR.

(2) While holding down►, set the POWER switch to CAMERA. The demonstration starts. The demonstration stops when you insert the cassette.

Note that once you enter demo mode, this mode is retained as long as the rechargeable lithium battery is in place. Therefore, demonstration starts automatically 10 minutes later every time you set the POWER switch to CAMERA, and after you eject the cassette.

To exit demo mode

(1) Turn the POWER switch to VTR.

(2) While holding down■, turn the POWER switch to CAMERA.

13 **Индикатор временного кода** (стр. 16)/**Индикатор самодиагностики** (стр. 117)/**Индикатор фоторежима** (стр. 39)/**Индикатор режима 5SEC** (стр. 19)

14 **Индикатор оставшейся ленты** (стр. 17)

15 **Индикатор ZERO SET MEMORY** (стр. 80)

16 **Предупреждающие индикаторы** (стр. 130)

17 **Индикатор DV IN** (стр. 83)

18 **Индикатор звукового режима** (стр. 90)

19 **Индикатор баланса белого** (стр. 56)

20 **Индикатор электрической вспышки** (стр. 40)

21 **Индикатор ручной фокусировки** (стр. 60)

Для просмотра демонстрации

Вы можете просмотреть краткую демонстрацию изображений со специальными эффектами. Если демонстрация появляется, когда Вы включите видеокамеру в первый раз, отключите демонстрационный режим для использования Вашей видеокамеры.

Для ввода демонстрационного режима

(1) Вытолкните кассету и установите выключатель POWER в положение VTR.

(2) Удерживая в нажатом состоянии ►, установите выключатель POWER в положение CAMERA. Демонстрация начинается. Демонстрация прекращается после вставки кассеты.

Примите к сведению, что если Вы введете режим демонстрации, то этот режим будет сохраняться до тех пор, пока аккумуляторная литиевая батарейка находится на месте. Таким образом, демонстрация автоматически будет начинаться каждый раз через 10 минут после того, как Вы установите выключатель POWER в положение CAMERA и извлечете кассету.

Для выхода из демонстрационного режима

(1) Установите выключатель POWER в положение VTR.

(2) Удерживая в нажатом состоянии ■, установите выключатель POWER в положение CAMERA.

Warning indicators

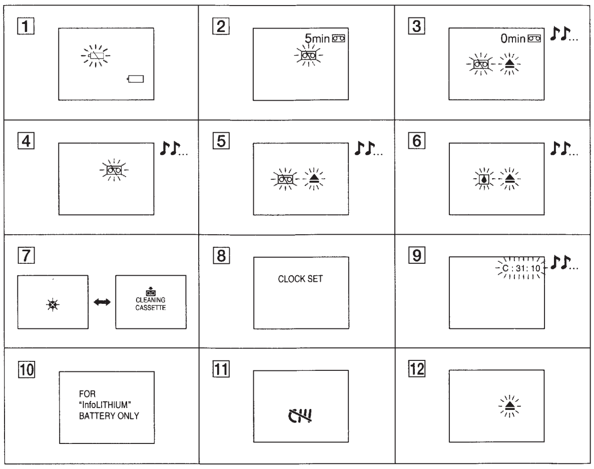
Предупреждающие индикаторы

If indicators flash or warning messages appear on the LCD screen or in the viewfinder, check the following:

♪: you can hear the melody or beep sound when BEEP is set to MELODY or NORMAL in the menu system.

Если индикаторы мигают или предупреждающие сообщения появляются на экране ЖКД или в видоискателе, то проверьте следующее:

♪: Вы можете слышать мелодию или зуммерный звуковой сигнал, когда функция BEEP установлена на MELODY или NORMAL в системе меню.



1 **The battery is weak or dead.**
Slow flashing: The battery is weak.
Fast flashing: The battery is dead.
Depending on conditions, the ▭ indicator may flash, even if there are 5 to 10 minutes remaining.

2 **The tape is near the end.**
The flashing is slow.

3 **The tape has run out.**
The flashing becomes rapid.

1 **Батарейный блок слабый или полностью разряженный.**
Медленное мигание: Батарейный блок слабый.
Быстрое мигание: Батарейный блок полностью разряженный.
В зависимости от условий индикатор ▭ может мигать, даже если еще осталось 5 – 10 минут.

2 **Лента приближается к концу.**
Медленное мигание.

3 **Лента закончилась.**
Мигание становится быстрым.

4 **No tape has been inserted.**

5 **The tab on the tape is out (red).**

6 **Moisture condensation has occurred.** (p. 100)

7 **The video heads may be contaminated.** (p. 101)

8 **The clock is not set.**
When this message appears though you set the date and time, the rechargeable lithium battery is discharged. Charge the lithium battery. (p. 92)

9 **The self-diagnosis function is working.**
Use the self-diagnosis function (p. 111). If the display does not disappear contact your Sony dealer or local authorized Sony service facility.

10 **The battery is not the "InfoLITHIUM" type.**

11 **The tape has no cassette memory.** (p. 5)

12 **Some other trouble has occurred.**
Eject the cassette.
If the display does not disappear, turn off the camcorder and remove the battery pack. Then install the battery pack and turn on the camcorder again. If the display still remains, contact your Sony dealer or local authorized Sony service

4 **Лента не вставлена.**

5 **На кассете нет лепестка (красная метка).**

6 **Произошла конденсация влаги.** (стр. 100)

7 **Видеоголовки возможно загрязнены.** (стр. 101)

8 **Часы не установлены.**
Когда данное сообщение появляется несмотря на то, что Вы установили дату и время, то аккумуляторная литиевая батарейка разряжена. Зарядите литиевую батарейку. (стр. 92)

9 **Работает функция самодиагностики.**
Используйте функцию самодиагностики (стр. 117). Если индикация не исчезает, свяжитесь с Вашим дилером Sony или местным уполномоченным предприятием по техническому обслуживанию Sony.

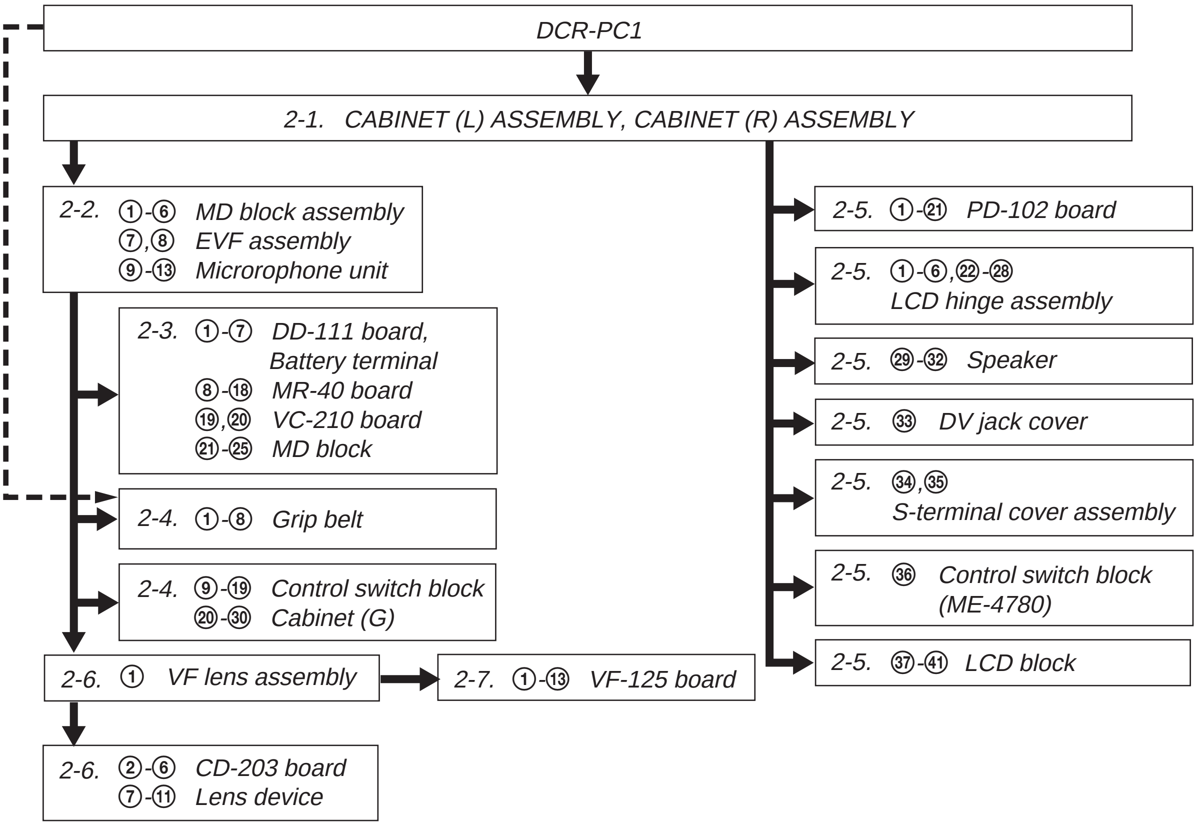
10 **Батарейный блок не является блоком типа "InfoLITHIUM".**

11 **Кассета ленты не имеет памяти.** (стр. 5)

12 **Имеется какая-либо другая проблема.**
Вытолкните кассету.
Если индикация не исчезает, выключите видеокамеру и удалите батарейный блок. Затем установите батарейный блок и снова включите питание. Если индикация все еще остается, свяжитесь с Вашим дилером Sony или местным уполномоченным предприятием по техническому обслуживанию Sony.

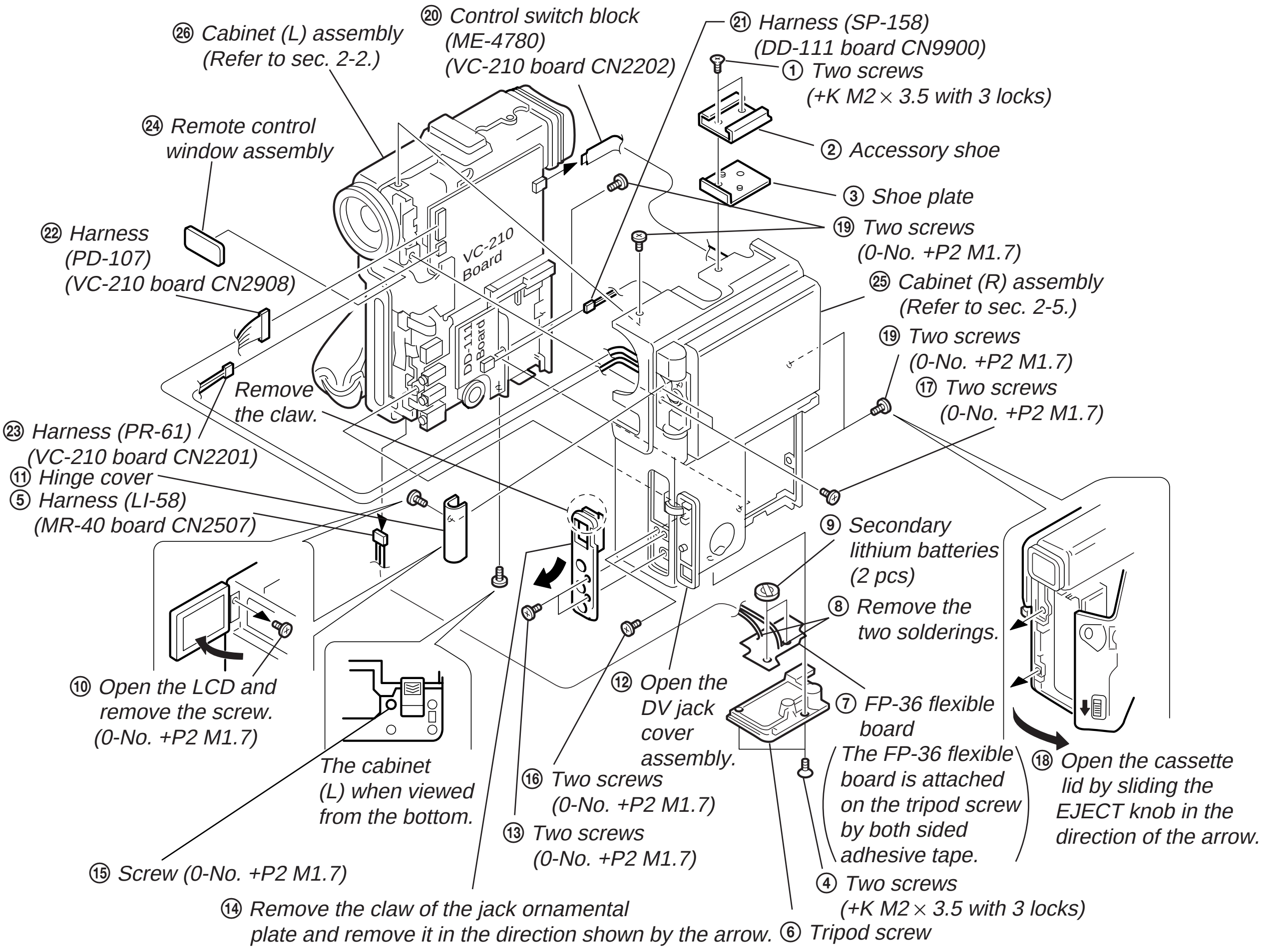
SECTION 2
DISASSEMBLY

The following flow chart shows the disassembly procedure.


DCR-PC1
2-1. CABINET (L) ASSEMBLY, CABINET (R) ASSEMBLY
2-2. ①-⑥ MD block assembly
⑦,⑧ EVF assembly
⑨-⑬ Microrophone unit
2-3. ①-⑦ DD-111 board, Battery terminal
⑧-⑱ MR-40 board
⑲,⑳ VC-210 board
㉑-㉕ MD block
2-4. ①-⑧ Grip belt
2-4. ⑨-⑲ Control switch block
⑳-㉚ Cabinet (G)
2-6. ① VF lens assembly
2-7. ①-⑬ VF-125 board
2-6. ②-⑥ CD-203 board
⑦-⑪ Lens device
2-5. ①-㉑ PD-102 board
2-5. ①-⑥,㉒-㉘ LCD hinge assembly
2-5. ㉙-㉜ Speaker
2-5. ㉝ DV jack cover
2-5. ㉞,㉟ S-terminal cover assembly
2-5. ㊱ Control switch block (ME-4780)
2-5. ㊲-㊶ LCD block

NOTE: Follow the disassembly procedure in the numerical order given.

2-1. CABINET (L) ASSEMBLY, CABINET (R) ASSEMBLY


VC-210 Board
DD-111 Board

㉖ Cabinet (L) assembly (Refer to sec. 2-2.)

⑳ Control switch block (ME-4780) (VC-210 board CN2202)

㉑ Harness (SP-158) (DD-111 board CN9900)

① Two screws (+K M2 × 3.5 with 3 locks)

㉔ Remote control window assembly

② Accessory shoe

③ Shoe plate

⑲ Two screws (0-No. +P2 M1.7)

㉒ Harness (PD-107) (VC-210 board CN2908)

㉕ Cabinet (R) assembly (Refer to sec. 2-5.)

⑲ Two screws (0-No. +P2 M1.7)

⑰ Two screws (0-No. +P2 M1.7)

Remove the claw.

㉓ Harness (PR-61) (VC-210 board CN2201)

⑪ Hinge cover

⑤ Harness (LI-58) (MR-40 board CN2507)

⑨ Secondary lithium batteries (2 pcs)

⑧ Remove the two solderings.

⑩ Open the LCD and remove the screw. (0-No. +P2 M1.7)

⑫ Open the DV jack cover assembly.

⑦ FP-36 flexible board

The FP-36 flexible board is attached on the tripod screw by both sided adhesive tape.

⑱ Open the cassette lid by sliding the EJECT knob in the direction of the arrow.

The cabinet (L) when viewed from the bottom.

⑯ Two screws (0-No. +P2 M1.7)

⑬ Two screws (0-No. +P2 M1.7)

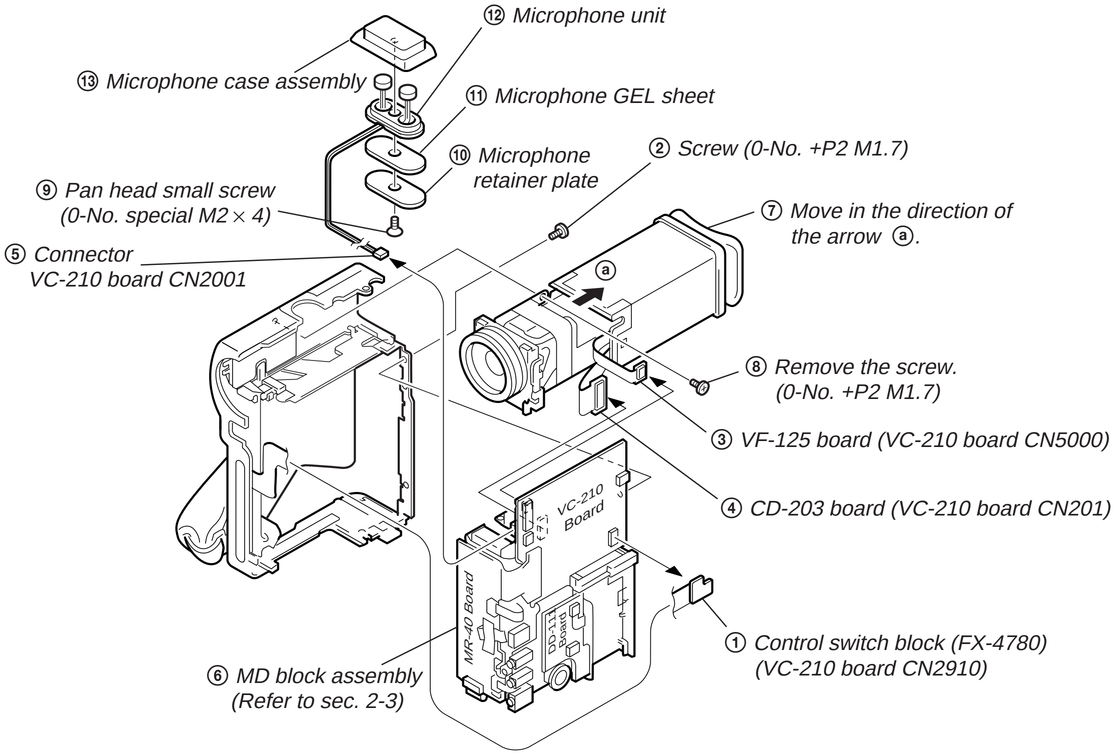
⑮ Screw (0-No. +P2 M1.7)

④ Two screws (+K M2 × 3.5 with 3 locks)

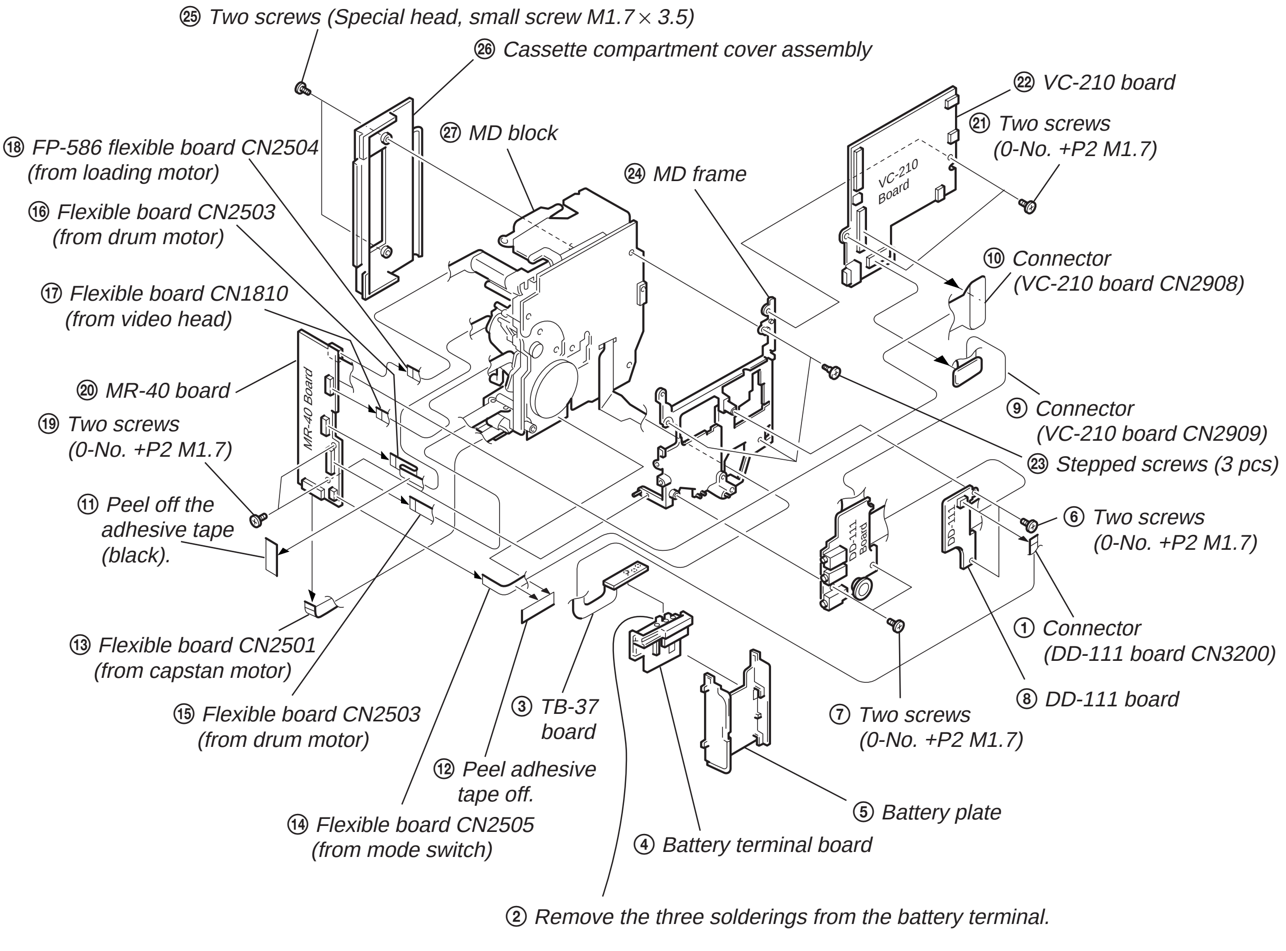
⑭ Remove the claw of the jack ornamental plate and remove it in the direction shown by the arrow.

⑥ Tripod screw

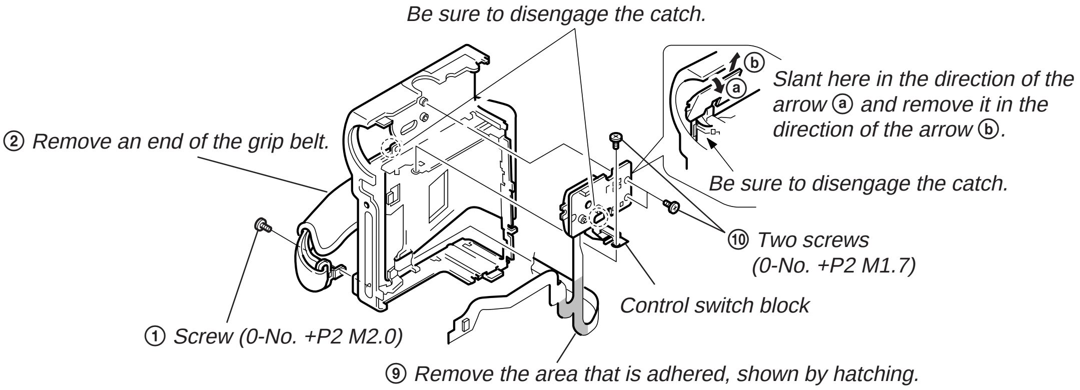
2-2. CABINET (L) ASSEMBLY, EVF, MD BLOCK ASSEMBLY


⑫ Microphone unit
⑬ Microphone case assembly
⑪ Microphone GEL sheet
⑩ Microphone retainer plate
② Screw (0-No. +P2 M1.7)
⑨ Pan head small screw (0-No. special M2 × 4)
⑦ Move in the direction of the arrow ⓐ.
⑤ Connector VC-210 board CN2001
a
⑧ Remove the screw. (0-No. +P2 M1.7)
③ VF-125 board (VC-210 board CN5000)
VC-210 Board
④ CD-203 board (VC-210 board CN201)
MR-40 Board
DD-111 Board
① Control switch block (FX-4780) (VC-210 board CN2910)
⑥ MD block assembly (Refer to sec. 2-3)

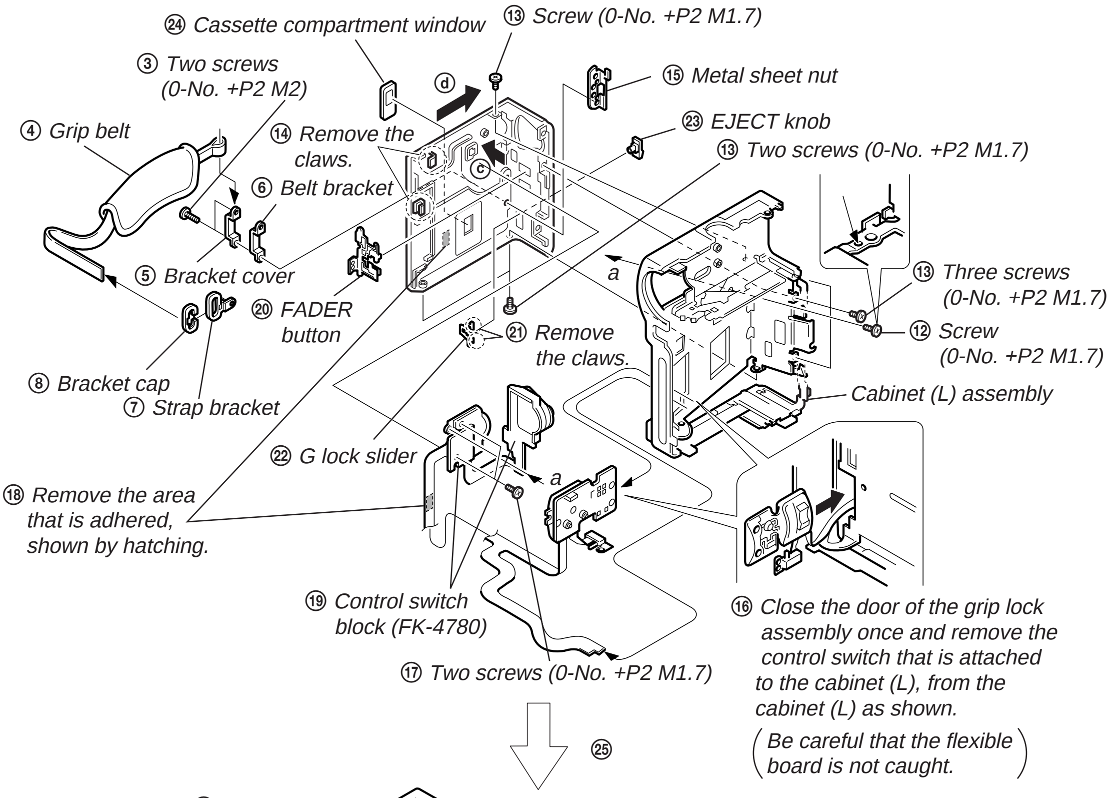
2-3. VC-210 BOARD, DC-111 BOARD, MF-40 BOARD

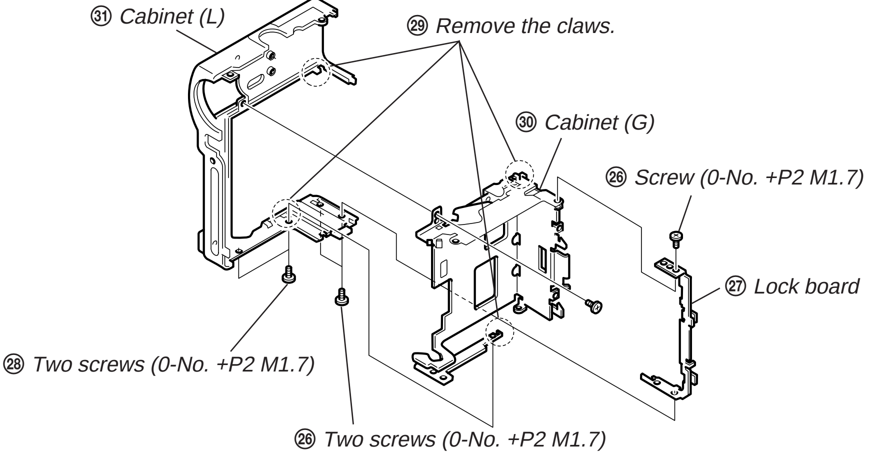

㉕ Two screws (Special head, small screw M1.7 × 3.5)
㉖ Cassette compartment cover assembly
㉒ VC-210 board
㉗ MD block
㉑ Two screws (0-No. +P2 M1.7)
⑱ FP-586 flexible board CN2504 (from loading motor)
㉔ MD frame
VC-210 Board
⑯ Flexible board CN2503 (from drum motor)
⑩ Connector (VC-210 board CN2908)
⑰ Flexible board CN1810 (from video head)
⑳ MR-40 board
MR-40 Board
⑨ Connector (VC-210 board CN2909)
⑲ Two screws (0-No. +P2 M1.7)
㉓ Stepped screws (3 pcs)
⑪ Peel off the adhesive tape (black).
⑥ Two screws (0-No. +P2 M1.7)
DD-111 Board
DD-111
① Connector (DD-111 board CN3200)
⑬ Flexible board CN2501 (from capstan motor)
⑧ DD-111 board
⑮ Flexible board CN2503 (from drum motor)
③ TB-37 board
⑦ Two screws (0-No. +P2 M1.7)
⑫ Peel adhesive tape off.
⑤ Battery plate
⑭ Flexible board CN2505 (from mode switch)
④ Battery terminal board
② Remove the three solderings from the battery terminal.

2-4. CONTROL SWITCH BLOCK

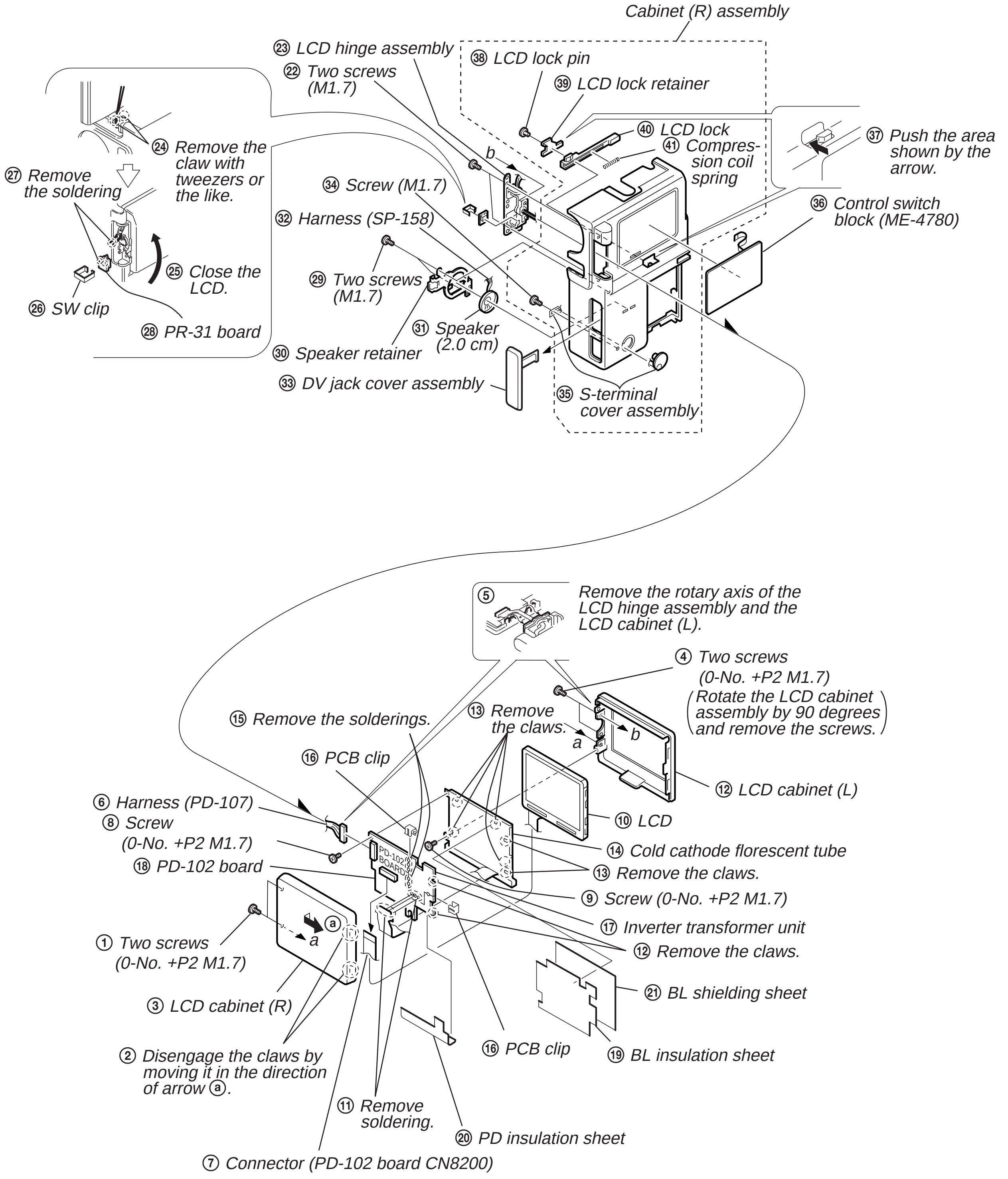

Be sure to disengage the catch.
② Remove an end of the grip belt.
Slant here in the direction of the arrow ⓐ and remove it in the direction of the arrow ⓑ.
ⓑ
ⓐ
Be sure to disengage the catch.
⑩ Two screws (0-No. +P2 M1.7)
Control switch block
① Screw (0-No. +P2 M2.0)
⑨ Remove the area that is adhered, shown by hatching.

⑪

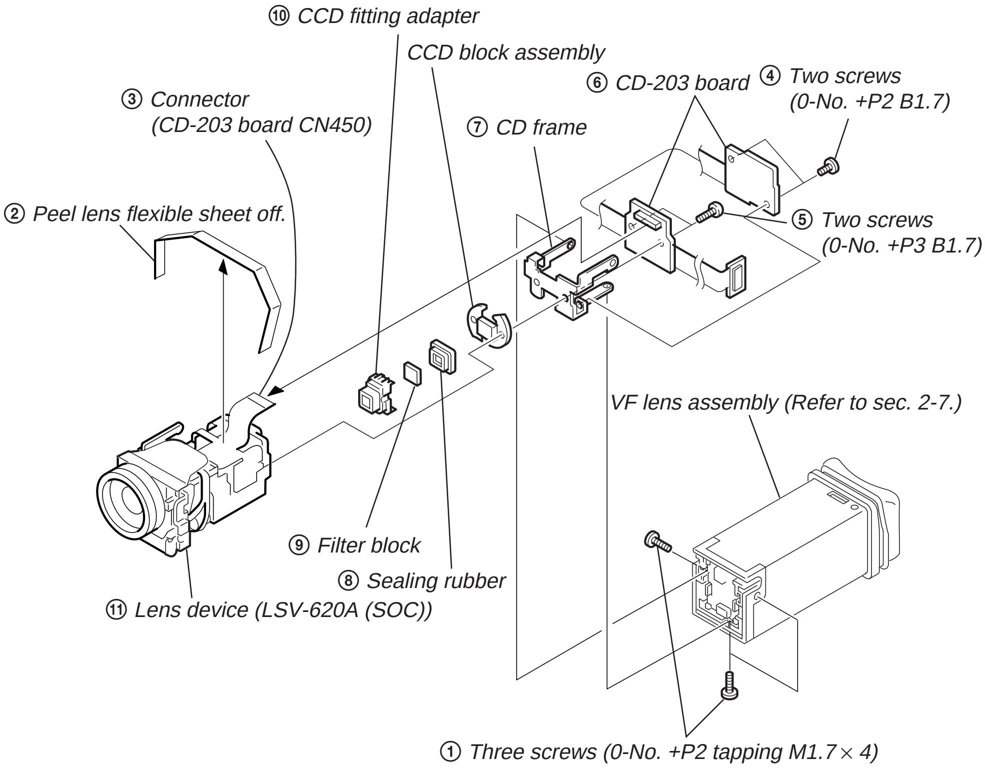

㉔ Cassette compartment window
⑬ Screw (0-No. +P2 M1.7)
③ Two screws (0-No. +P2 M2)
ⓓ
⑮ Metal sheet nut
④ Grip belt
⑭ Remove the claws.
㉓ EJECT knob
⑬ Two screws (0-No. +P2 M1.7)
ⓒ
⑥ Belt bracket
⑤ Bracket cover
a
⑬ Three screws (0-No. +P2 M1.7)
⑳ FADER button
⑫ Screw (0-No. +P2 M1.7)
㉑ Remove the claws.
⑧ Bracket cap
Cabinet (L) assembly
⑦ Strap bracket
㉒ G lock slider
a
⑱ Remove the area that is adhered, shown by hatching.
⑲ Control switch block (FK-4780)
⑯ Close the door of the grip lock assembly once and remove the control switch that is attached to the cabinet (L), from the cabinet (L) as shown.
(Be careful that the flexible board is not caught.)
⑰ Two screws (0-No. +P2 M1.7)
㉕


㉛ Cabinet (L)
㉙ Remove the claws.
㉚ Cabinet (G)
㉖ Screw (0-No. +P2 M1.7)
㉗ Lock board
㉘ Two screws (0-No. +P2 M1.7)
㉖ Two screws (0-No. +P2 M1.7)

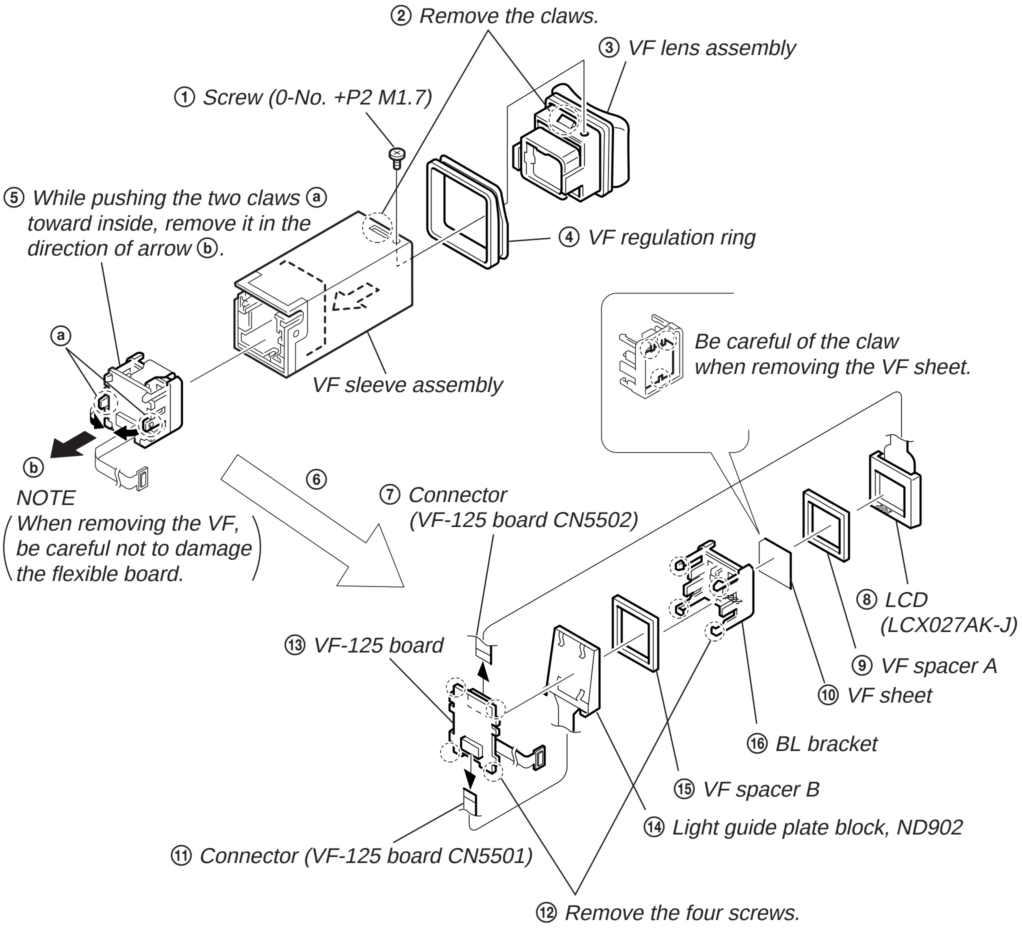
2-5. CABINET (R) ASSEMBLY, PD-102 BOARD


Cabinet (R) assembly
㉓ LCD hinge assembly
㉒ Two screws (M1.7)
㊳ LCD lock pin
㊴ LCD lock retainer
㊵ LCD lock
㊶ Compres-sion coil spring
㊲ Push the area shown by the arrow.
㉔ Remove the claw with tweezers or the like.
㉗ Remove the soldering
b
㉞ Screw (M1.7)
㊱ Control switch block (ME-4780)
㉜ Harness (SP-158)
㉙ Two screws (M1.7)
㉕ Close the LCD.
㉖ SW clip
㉘ PR-31 board
㉛ Speaker (2.0 cm)
㉚ Speaker retainer
㉝ DV jack cover assembly
㉟ S-terminal cover assembly
⑤
Remove the rotary axis of the LCD hinge assembly and the LCD cabinet (L).
④ Two screws (0-No. +P2 M1.7)
Rotate the LCD cabinet assembly by 90 degrees and remove the screws.
⑮ Remove the solderings.
⑬ Remove the claws.
a
b
⑯ PCB clip
⑫ LCD cabinet (L)
⑥ Harness (PD-107)
⑧ Screw (0-No. +P2 M1.7)
⑩ LCD
⑱ PD-102 board
PD-102 BOARD
⑭ Cold cathode florescent tube
⑬ Remove the claws.
⑨ Screw (0-No. +P2 M1.7)
⑰ Inverter transformer unit
a
a
① Two screws (0-No. +P2 M1.7)
⑫ Remove the claws.
㉑ BL shielding sheet
③ LCD cabinet (R)
② Disengage the claws by moving it in the direction of arrow ⓐ.
⑯ PCB clip
⑲ BL insulation sheet
⑪ Remove soldering.
⑳ PD insulation sheet
⑦ Connector (PD-102 board CN8200)

2-6. CD-203 BOARD

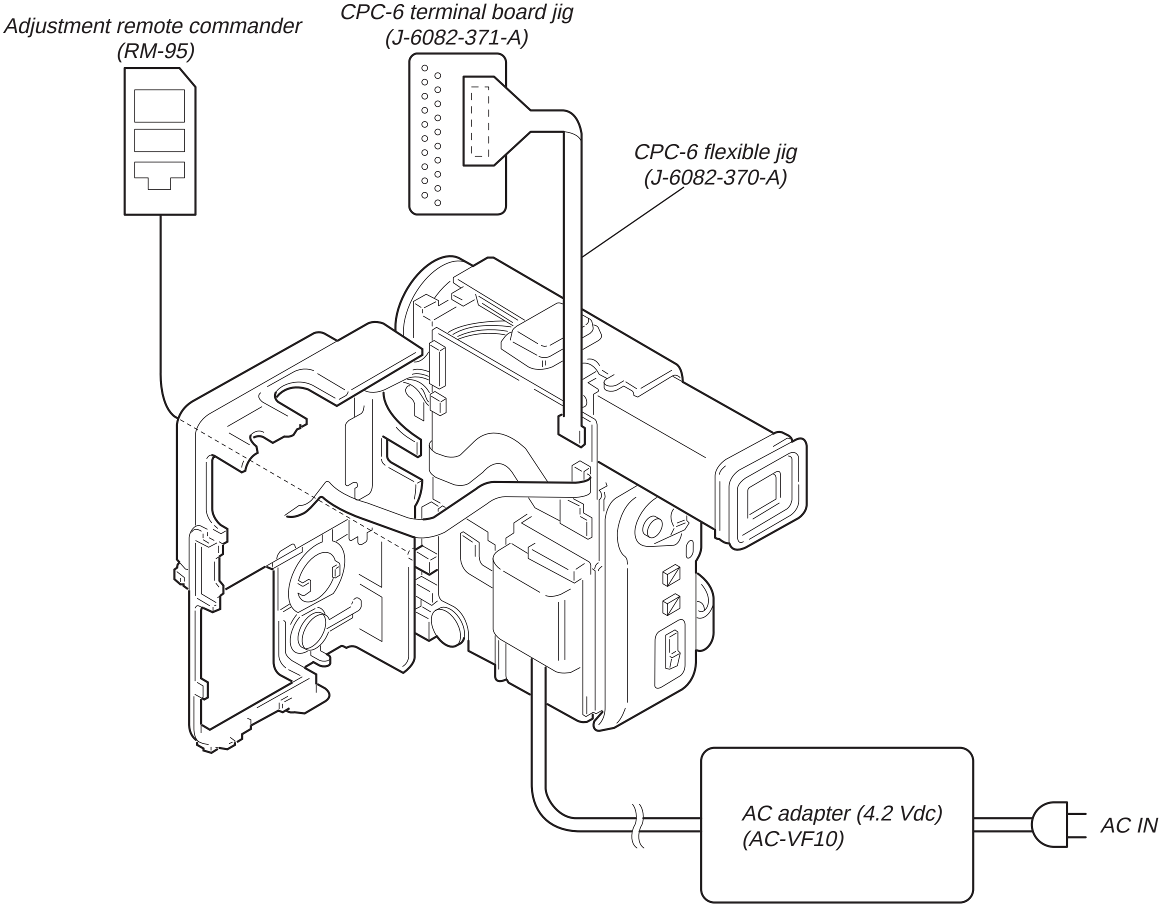

⑩ CCD fitting adapter
CCD block assembly
⑥ CD-203 board
④ Two screws
(0-No. +P2 B1.7)
③ Connector
(CD-203 board CN450)
⑦ CD frame
② Peel lens flexible sheet off.
⑤ Two screws
(0-No. +P3 B1.7)
VF lens assembly (Refer to sec. 2-7.)
⑨ Filter block
⑧ Sealing rubber
⑪ Lens device (LSV-620A (SOC))
① Three screws (0-No. +P2 tapping M1.7 × 4)

2-7. VF-125 BOARD


② Remove the claws.
③ VF lens assembly
① Screw (0-No. +P2 M1.7)
⑤ While pushing the two claws ⓐ
toward inside, remove it in the
direction of arrow ⓑ.
④ VF regulation ring
ⓐ
VF sleeve assembly
Be careful of the claw
when removing the VF sheet.
ⓑ
⑥
NOTE
When removing the VF,
be careful not to damage
the flexible board.
⑦ Connector
(VF-125 board CN5502)
⑧ LCD
(LCX027AK-J)
⑬ VF-125 board
⑨ VF spacer A
⑩ VF sheet
⑯ BL bracket
⑮ VF spacer B
⑭ Light guide plate block, ND902
⑪ Connector (VF-125 board CN5501)
⑫ Remove the four screws.

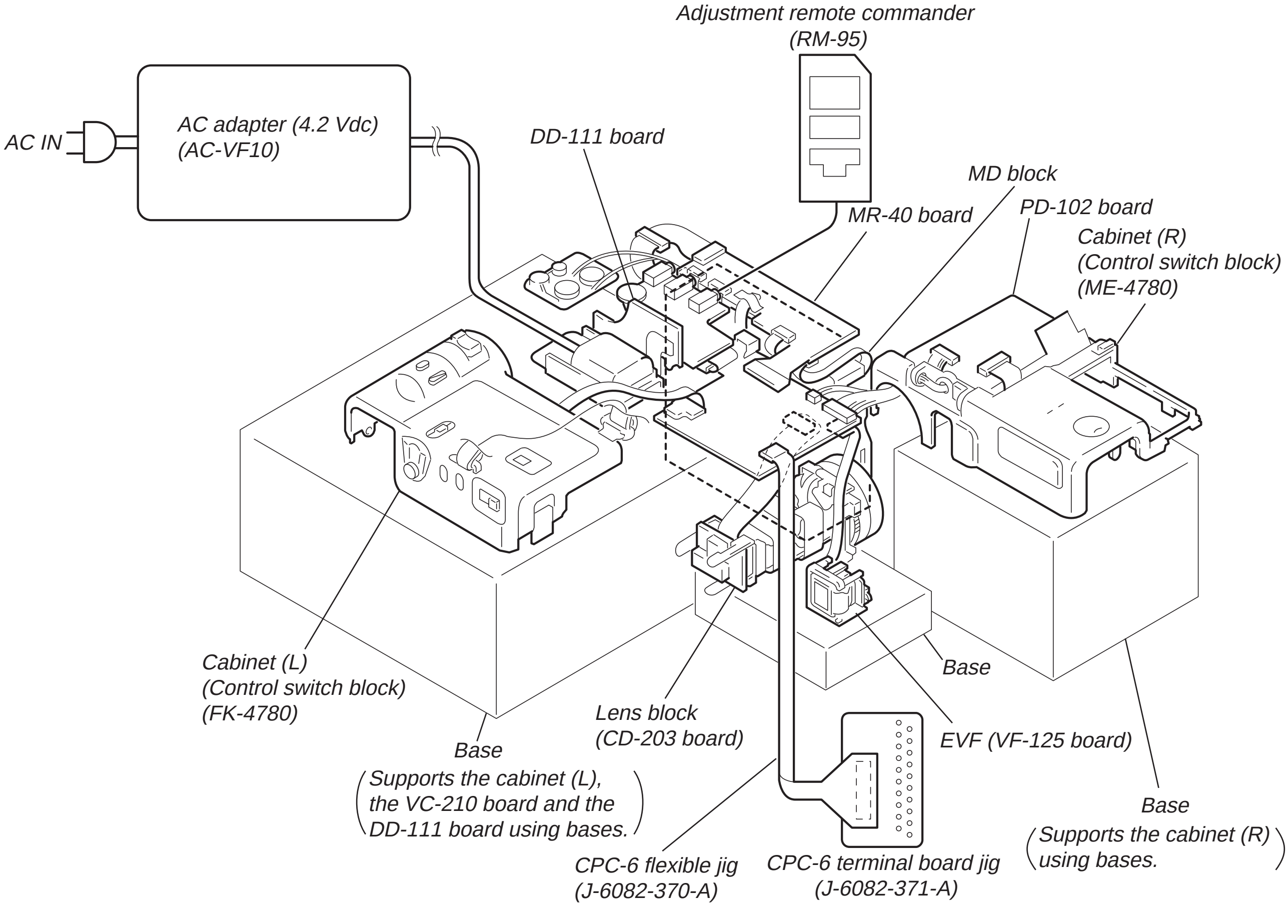
2-8. SERVICE POSITION (Mainly for adjustment)

Firstly: Remove the cabinet (R) referring to section 2-1. Then connect the CPC-6 jig, the adjustment remote commander and the AC adapter as shown below.

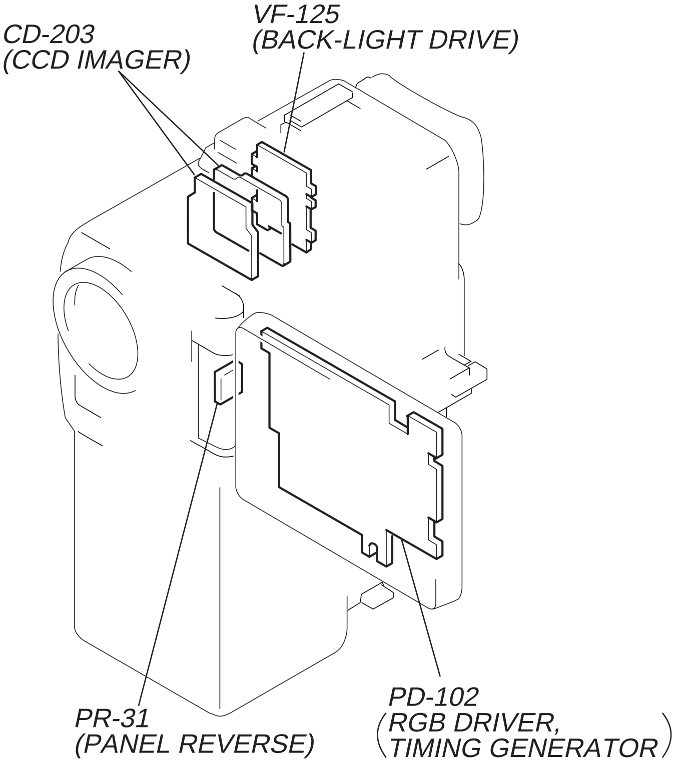

Adjustment remote commander
(RM-95)
CPC-6 terminal board jig
(J-6082-371-A)
CPC-6 flexible jig
(J-6082-370-A)
AC adapter (4.2 Vdc)
(AC-VF10)
AC IN

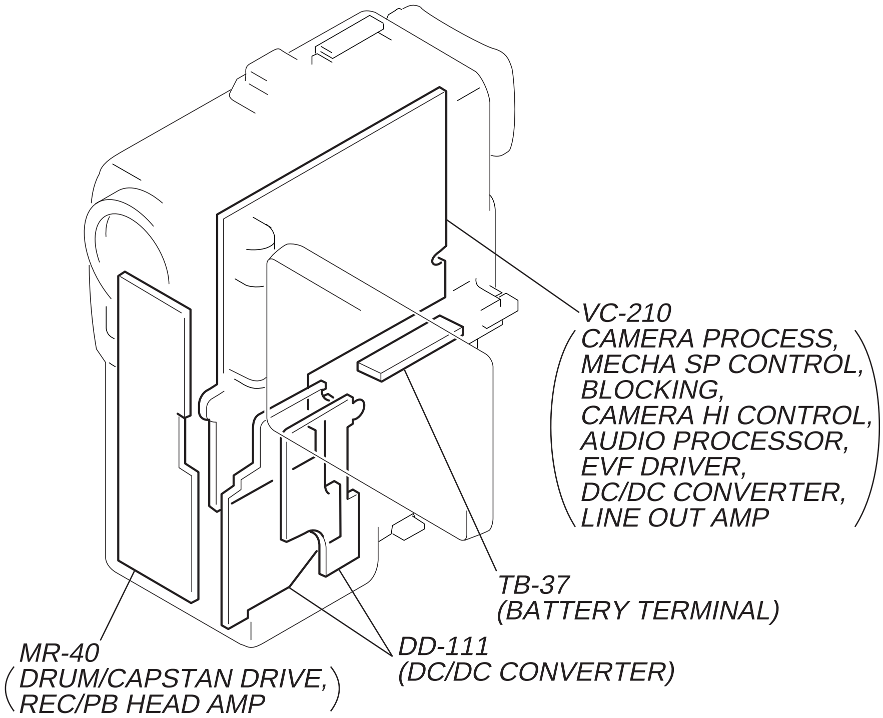
2-9. SERVICE POSITION (Mainly for voltage measurement)

Firstly: Remove the following followings referring to sections 2-1 to 2-5, and connect them as shown below.

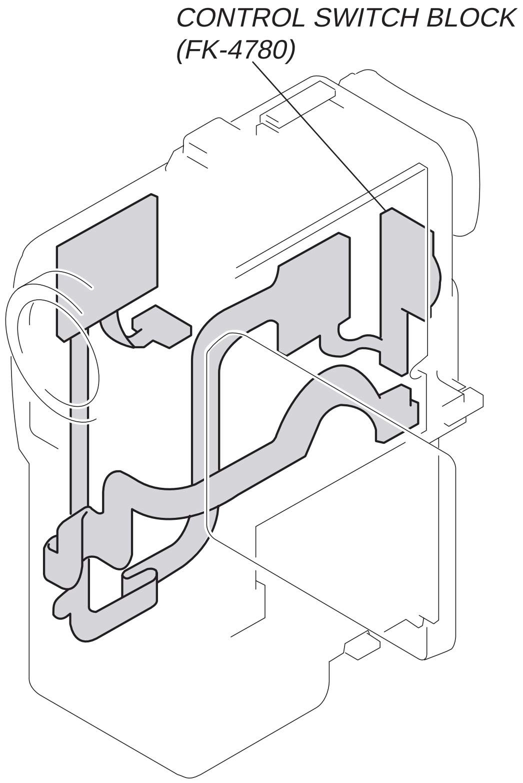

Adjustment remote commander
(RM-95)
AC IN
AC adapter (4.2 Vdc)
(AC-VF10)
DD-111 board
MD block
MR-40 board
PD-102 board
Cabinet (R)
(Control switch block)
(ME-4780)
Cabinet (L)
(Control switch block)
(FK-4780)
Base
Lens block
(CD-203 board)
EVF (VF-125 board)
Base
Supports the cabinet (L), the VC-210 board and the DD-111 board using bases.
Base
Supports the cabinet (R) using bases.
CPC-6 flexible jig
(J-6082-370-A)
CPC-6 terminal board jig
(J-6082-371-A)

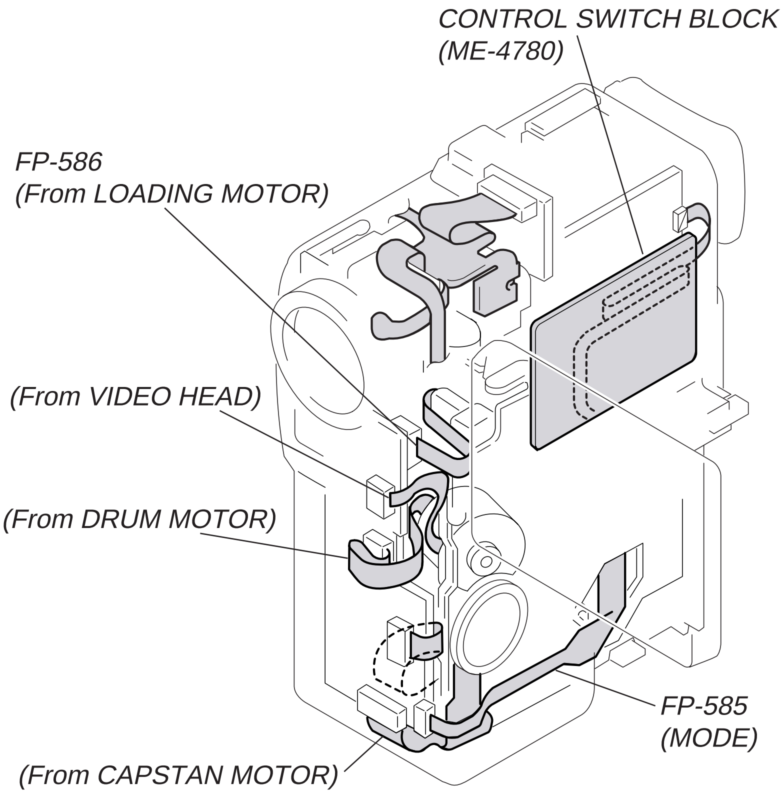
2-10. CIRCUIT BOARDS LOCATION


CD-203
(CCD IMAGER)
VF-125
(BACK-LIGHT DRIVE)
PR-31
(PANEL REVERSE)
PD-102
(RGB DRIVER,
TIMING GENERATOR)


VC-210
(CAMERA PROCESS,
MECHA SP CONTROL,
BLOCKING,
CAMERA HI CONTROL,
AUDIO PROCESSOR,
EVF DRIVER,
DC/DC CONVERTER,
LINE OUT AMP)
TB-37
(BATTERY TERMINAL)
DD-111
(DC/DC CONVERTER)
MR-40
(DRUM/CAPSTAN DRIVE,
REC/PB HEAD AMP)

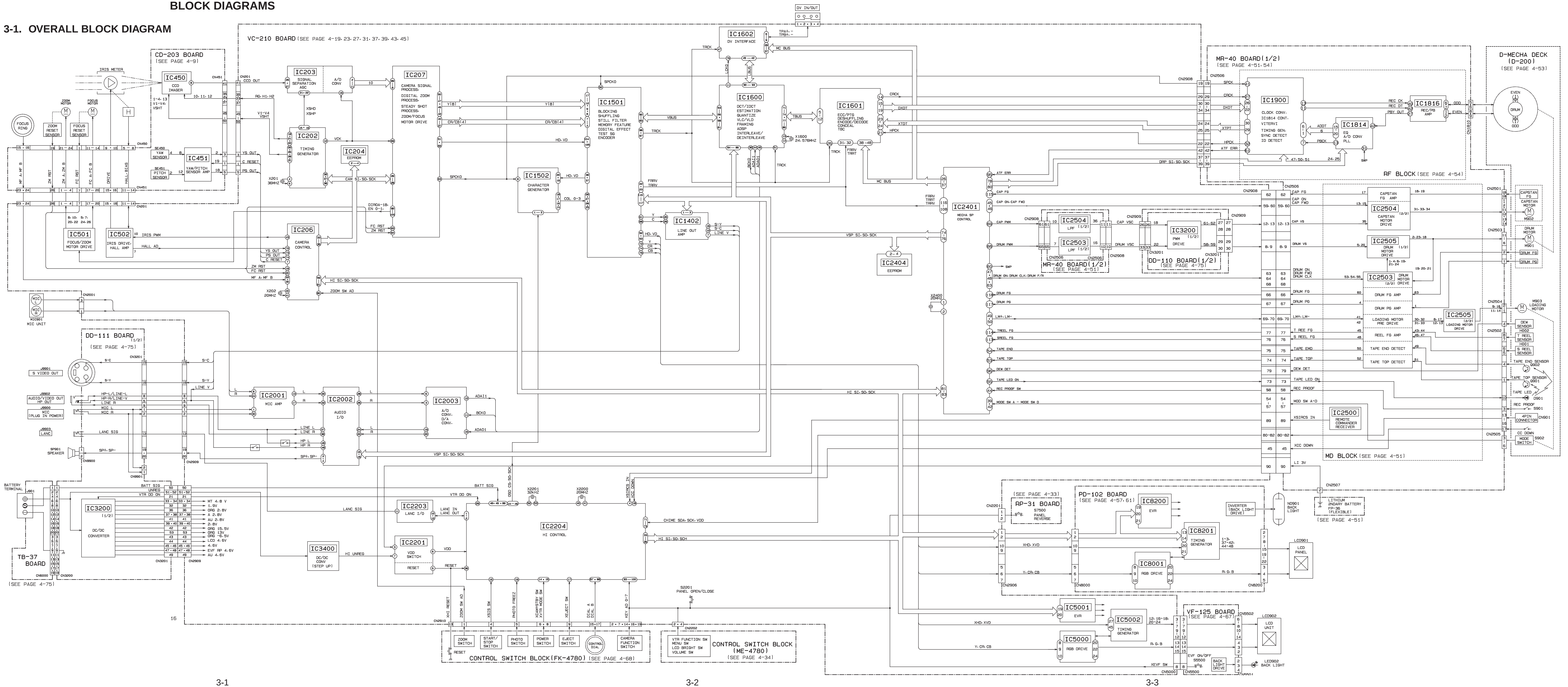
2-11. FLEXIBLE BOARDS LOCATION


CONTROL SWITCH BLOCK
(FK-4780)


CONTROL SWITCH BLOCK
(ME-4780)
FP-586
(From LOADING MOTOR)
(From VIDEO HEAD)
(From DRUM MOTOR)
FP-585
(MODE)
(From CAPSTAN MOTOR)

SECTION 3
BLOCK DIAGRAMS

3-1. OVERALL BLOCK DIAGRAM

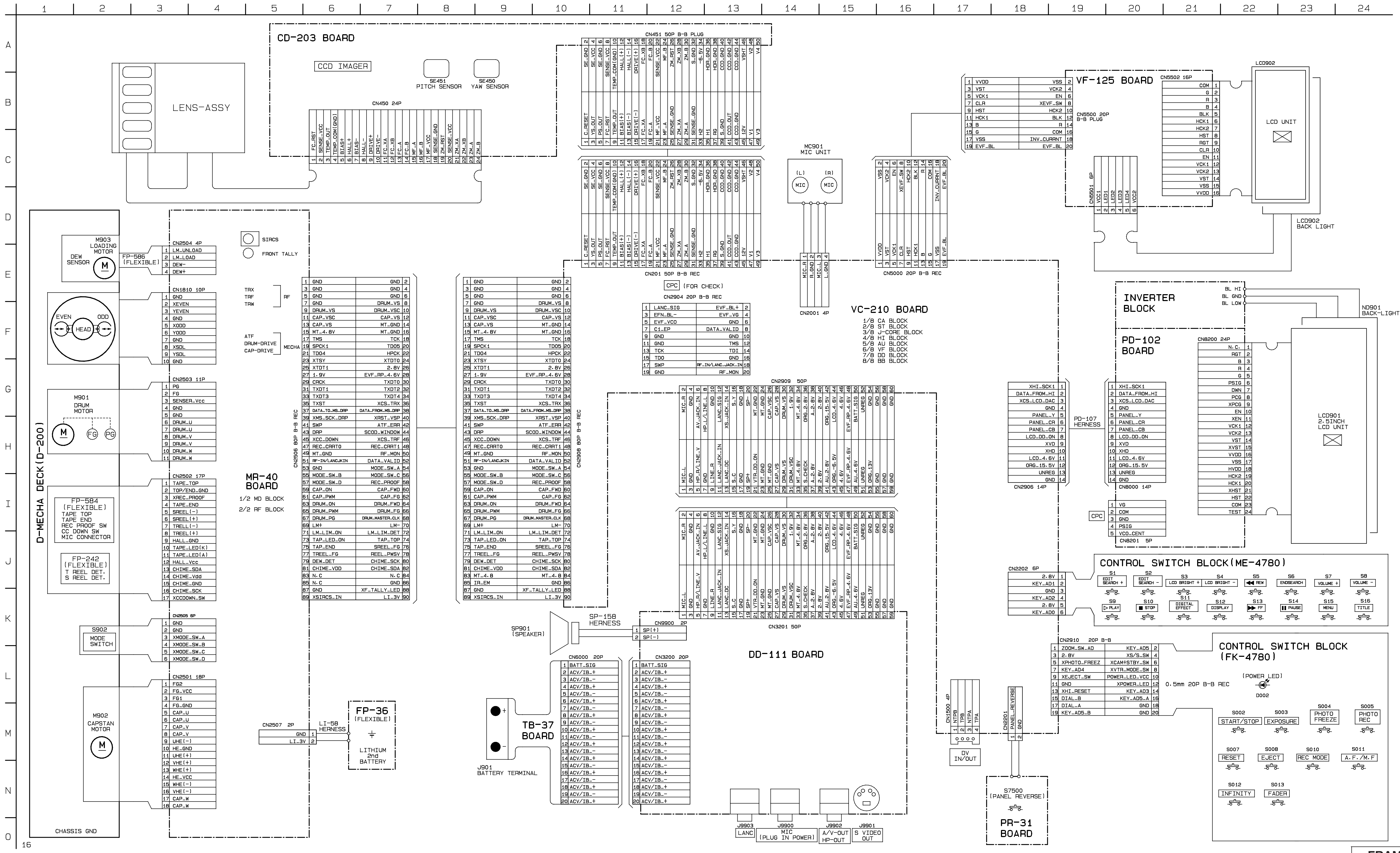

DV IN/OUT
CD-203 BOARD (SEE PAGE 4-9)
IC450 CCD IMAGER
IC451 YAW/PITCH SENSOR AMP
IRIS METER
ZOOM MOTOR
FOCUS MOTOR
FOCUS RING
ZOOM RESET SENSOR
FOCUS RESET SENSOR
YAW SENSOR
PITCH SENSOR
VC-210 BOARD (SEE PAGE 4-19, 23, 27, 31, 37, 39, 43, 45)
IC203 SIGNAL SEPARATION AGC
A/D CONV
IC207 CAMERA SIGNAL PROCESS DIGITAL ZOOM PROCESS STEADY SHOT PROCESS ZOOM/FOCUS MOTOR DRIVE
IC202 TIMING GENERATOR
IC204 EEPROM
IC501 FOCUS/ZOOM MOTOR DRIVE
IC502 IRIS DRIVE HALL AMP
IC206 CAMERA CONTROL
IC1501 BLOCKING SHUFFLING STILL FILTER MEMORY FEATURE DIGITAL EFFECT TEST SG ENCODER
IC1502 CHARACTER GENERATOR
IC1602 DV INTERFACE
IC1600 DCT/IDCT ESTIMATION QUANTIZE VLC/VLD FRAMING ADSP INTERLEAVE/DEINTERLEAVE
IC1601 ECC/PTS DESHUFFLING ENCODE/DECODE CONCEAL TBC
IC1402 LINE OUT AMP
IC2401 MECHA SP CONTROL
IC2404 EEPROM
MIC901 MIC UNIT
DD-111 BOARD (1/2) (SEE PAGE 4-75)
J901 S VIDEO OUT
J902 AUDIO/VIDEO OUT HP OUT
J903 MIC (PLUG IN POWER)
J903 LANC
SP901 SPEAKER
IC2001 MIC AMP
IC2002 AUDIO I/O
IC2003 A/D CONV. D/A CONV.
BATTERY TERMINAL
TB-37 BOARD (SEE PAGE 4-75)
IC3200 DC/DC CONVERTER (1/2)
IC3400 DC/DC CONV (STEP UP)
IC2203 LANC I/O
IC2201 VDD SWITCH
IC2204 HI CONTROL
S2201 PANEL OPEN/CLOSE
CONTROL SWITCH BLOCK (FK-4780) (SEE PAGE 4-68)
ZOOM SWITCH
START/STOP SWITCH
PHOTO SWITCH
POWER SWITCH
EJECT SWITCH
CONTROL DIAL
CAMERA FUNCTION SWITCH
CONTROL SWITCH BLOCK (ME-4780) (SEE PAGE 4-34)
VTR FUNCTION SW MENU SW LCD BRIGHT SW VOLUME SW
MR-40 BOARD (1/2) (SEE PAGE 4-51, 54)
IC1900 CLOCK CONV. IC1814 CONT. VITERVI TIMING GEN. SYNC DETECT ID DETECT
IC1814 EQ A/D CONV PLL
IC1816 REC/PB AMP
RF BLOCK (SEE PAGE 4-54)
D-MECHA DECK (D-200) (SEE PAGE 4-53)
DRUM
IC2504 LPF (1/2)
IC2503 LPF (1/2)
MR-40 BOARD (1/2) (SEE PAGE 4-51)
IC3200 PWM DRIVE (1/2)
DD-110 BOARD (1/2) (SEE PAGE 4-75)
IC2504 CAPSTAN MOTOR DRIVE (2/2)
IC2505 DRUM MOTOR DRIVE (1/2)
IC2503 DRUM MOTOR DRIVE (2/2)
IC2505 LOADING MOTOR DRIVE (2/2)
DRUM FG AMP
DRUM PG AMP
LOADING MOTOR PRE DRIVE
REEL FG AMP
TAPE END DETECT
TAPE TOP DETECT
IC2500 REMOTE COMMANDER RECEIVER
MD BLOCK (SEE PAGE 4-51)
CAPSTAN FG
CAPSTAN MOTOR M902
DRUM MOTOR M901
M903 LOADING MOTOR
DEW SENSOR
T REEL SENSOR
S REEL SENSOR
TAPE END SENSOR
TAPE TOP SENSOR
TAPE LED
REC PROOF S901
4PIN CONNECTOR
CC DOWN
MODE SWITCH
LITHIUM 2NDARY BATTERY FP-36 (FLEXIBLE) (SEE PAGE 4-51)
RP-31 BOARD (SEE PAGE 4-33) S7500 PANEL REVERSE
PD-102 BOARD (SEE PAGE 4-57, 61)
IC8200 EVR
IC8201 TIMING GENERATOR
IC8001 RGB DRIVE
INVERTER (BACK LIGHT DRIVE)
ND901 BACK LIGHT
LCD901 LCD PANEL
IC5001 EVR
IC5002 TIMING GENERATOR
IC5000 RGB DRIVE
VF-125 BOARD (SEE PAGE 4-67)
EVF ON/OFF S5000
BACK LIGHT DRIVE
LCD902 LCD UNIT
LED902 BACK LIGHT

3-2. POWER BLOCK DIAGRAM

J901 BATTERY TERMINAL
TB-37 BOARD
DD-111 BOARD (SEE PAGE 4-75)
CN6000
CN3200
BATT SIG
ACV/IB+
ACV/IB-
F3202
F3203
F3204
F3205
IC3200 DC/DC CONVERTER
EMERGENCY DETECT
T3200
Q3206 SWITCHING
Q3212 SWITCHING
Q3213 SWITCHING
Q3214 SWITCHING
Q3208 SWITCHING
Q3209 SWITCHING
Q804 SWITCHING
Q3211 SWITCHING
LIMITER
J9903 LANC
VC-210 BOARD (SEE PAGE 4-19, 23, 27, 31, 37, 39, 43, 45)
IC3400 DC/DC CONV. (STEP UP)
IC1402 LINE OUT AMP
IC1404
IC3402
IC2200 REG
IC2201
IC2204 HI CONTROL
IC2203 LANC I/O
Q3400 EMERGENCY DETECT
IC1600 DCT/IDCT ESTIMATION QUANTIZE VLC/VLD FLAMING INTERLEAVE/ DEINTERLEAVE
IC1601 ECC/PTG DESHUFFLING ENCODE/DE CODE CONCEAL TBC
IC1602 DV INTERFACE
IC1501 BLOCKING SHUFFLING STILL FILTER MEMORY FEATURE DIGITAL EFFECT TEST SIG ENCODER
IC1502 CHARACTER GENERATER
IC2001 MIC AMP
IC2005 2.8V REG
IC2002 AUDIO I/O
IC2003 A/D CONV. D/A CONV.
IC2000 PLUG DC SWITCH
IC2006 REG
IC2404 EEPROM
IC2401 MECHA SP CONTROL
IC502 IRIS DRIVE HALL AMP
IC201 AMP
IC501 ZOOM/FOCUS MOTOR DRIVE
IC207 CAMERA SIGNAL PROCESS, DIGITAL ZOOM PROCESS, ZOOM/FOCUS MOTOR DRIVE
IC204 EEPROM
IC206 CAMERA CONTROL
IC203 SIGNAL SEPARATION, A/D CONV
IC202 TIMING GENERATOR
CONTROL SWITCH BLOCK (FK-4780)
CONTROL SWITCH BLOCK (ME-4780)
PD-102 BOARD (SEE PAGE 4-57, 61)
LCD901 2.5INCH LCD UNIT
IC8000 3V REG
IC8200 EVR
IC8201 TIMING GENERATOR
IC8001 RGB DRIVE
INVERTER BACK LIGHT DRIVE
VF-125 BOARD (SEE PAGE 4-67)
LCD902 LCD UNIT
IC5000 LCD DRIVE
IC5001 DVR
IC5002 TIMING GENERATOR
LED902 BACK LIGHT
CPC (FOR CHECK)
IC2504 CAPSTAN MOTOR DRIVE
IC2505 DRUM MOTOR DRIVE
IC2503 DRUM/LOADING MOTOR PREDRIVE
IC2500 REMOTE COMMANDER RECEIVER
IC1816 REC/PB AMP
IC1814 EQ, A/D CONV, PLL
IC1900 CLOCK CONV, IC1814 CONT, VITERVI TIMING GEN, SYNC DETECT ID DETECT
MR-40 BOARD (SEE PAGE 4-51, 54)
FP-584 (FLEXIBLE) TAPE SENSOR
FP-242 (FLEXIBLE) REEL DETECT
M902 CAPSTAN MOTOR
D MECHA DECK (D-200) (SEE PAGE 4-53)
IC450 CCD IMAGER
IC451 YAW/PITCH SENSOR AMP
SE450 YAW SENSOR
SE451 PITCH SENSOR
CD-203 BOARD (SEE PAGE 4-9)
LENS ASSY
FOCUS RING
IRIS
ZOOM RESET SENSOR
FOCUS RESET SENSOR
FP-36 (FLEXIBLE) LITHIUM 2NDALY BATTERY (SEE PAGE 4-51)

SECTION 4
PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

4-1. FRAME SCHEMATIC DIAGRAM

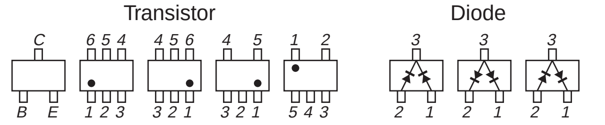

CD-203 BOARD
CCD IMAGER
LENS-ASSY
SE451 PITCH SENSOR
SE450 YAW SENSOR
CN450 24P
CN451 50P B-B PLUG
D-MECHA DECK (D-200)
M903 LOADING MOTOR
DEW SENSOR
FP-586 (FLEXIBLE)
M901 DRUM MOTOR
FP-584 (FLEXIBLE) TAPE TOP TAPE END REC PROOF SW CC DOWN SW MIC CONNECTOR
FP-242 (FLEXIBLE) T REEL DET. S REEL DET.
S902 MODE SWITCH
M902 CAPSTAN MOTOR
CHASSIS GND
MR-40 BOARD
1/2 MD BLOCK
2/2 RF BLOCK
SIRCS
FRONT TALLY
FP-36 (FLEXIBLE)
LITHIUM 2nd BATTERY
LI-58 HERNESS
CN2507 2P
CN2504 4P
CN1610 10P
CN2503 11P
CN2502 17P
CN2505 6P
CN2501 18P
CN2506 80P B-B REC
CN2908 80P B-B PLUG
CN2201 50P B-B REC
CN2904 20P B-B REC
CPC (FOR CHECK)
MC901 MIC UNIT
CN2001 4P
VC-210 BOARD
1/8 CA BLOCK
2/8 ST BLOCK
3/8 J-CORE BLOCK
4/8 HI BLOCK
5/8 AU BLOCK
6/8 VF BLOCK
7/8 DD BLOCK
8/8 BB BLOCK
CN5000 20P B-B REC
CN2909 50P
CN3201 50P
DD-111 BOARD
SP901 (SPEAKER)
SP-158 HERNESS
CN9900 2P
TB-37 BOARD
J901 BATTERY TERMINAL
CN6000 20P
CN3200 20P
J9903 LANC
J9902 MIC (PLUG IN POWER)
J9902 A/V-OUT HP-OUT
J9901 S VIDEO OUT
CN1500 4P
DV IN/OUT
CN7201
S7500 (PANEL REVERSE)
PR-31 BOARD
VF-125 BOARD
CN5500 20P B-B PLUG
CN5502 16P
CN5501 6P
LCD902
LCD UNIT
LCD902 BACK LIGHT
INVERTER BLOCK
ND901 BACK-LIGHT
PD-102 BOARD
PD-107 HERNESS
CN2905 14P
CN8000 14P
CN8200 24P
CN8201 5P
LCD901 2.5INCH LCD UNIT
CPC
CN2202 8P
CONTROL SWITCH BLOCK (ME-4780)
CN2910 20P B-B
0.5mm 20P B-B REC
CONTROL SWITCH BLOCK (FK-4780)
(POWER LED) D002
S002 START/STOP
S003 EXPOSURE
S004 PHOTO FREEZE
S005 PHOTO REC
S007 RESET
S008 EJECT
S010 REC MODE
S011 A.F./M.F
S012 INFINITY
S013 FADER

4-2. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

THIS NOTE IS COMMON FOR WIRING BOARDS AND SCHEMATIC DIAGRAMS
(In addition to this, the necessary note is printed in each block)

(For printed wiring boards)

- ▨ : Pattern from the side which enables seeing.
  (The other layers' patterns are not indicated.)
- Through hole is omitted.
- Circled numbers refer to waveforms.
- There are few cases that the part printed on diagram isn't mounted in this model.
- Chip parts.


Transistor
Diode
C
B E
6 5 4
1 2 3
4 5 6
3 2 1
4 5
3 2 1
1 2
5 4 3
3
2 1
3
2 1
3
2 1

(For schematic diagrams)

- All capacitors are in mF unless otherwise noted. pF : m mF. 50V or less are not indicated except for electrolytics and tantalums.
- Chip resistors are 1/10W unless otherwise noted. kW=1000W, MW=1000kW.
- Caution when replacing chip parts.
  New parts must be attached after removal of chip.
  Be careful not to heat the minus side of tantalum capacitor, Because it is damaged by the heat.
- Some chip part will be indicated as follows.

Example C541 L452
22U 10UH
TA A 2520

Kinds of capacitor

Temperature characteristics

External dimensions (mm)

- Constants of resistors, capacitors, ICs and etc with XX indicate that they are not used.
  In such cases, the unused circuits may be indicated.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- Signal name
  XEDIT → EDIT PB/XREC → PB/REC
- ▭ : non flammable resistor
- ▭ : fusible resistor
- ▭ : panel designation
- ━━ : B+ Line *
- ▬ ▬ ▬ : B– Line *
- ⇨ : IN/OUT direction of (+,–) B LINE. *
- ▭ : adjustment for repair. *
- Circled numbers refer to waveforms. *

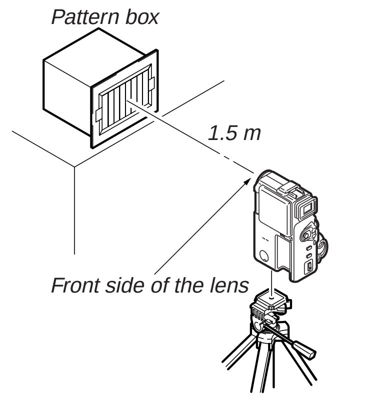
* Indicated by the color red.

Note : The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	**Note :** Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

(Measuring conditions voltage and waveform)

- Voltages and waveforms are measured between the measurement points and ground when camera shoots color bar chart of pattern box. They are reference values and reference waveforms. *
  (VOM of DC 10 MW input impedance is used.).
- Voltage values change depending upon input impedance of VOM used.) *

1. Connection


Pattern box
1.5 m
Front side of the lens

2. Adjust the distance so that the output waveform of Fig. a and the Fig. b can be obtain.

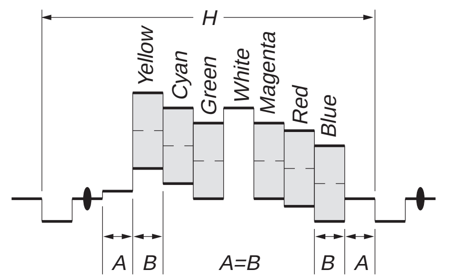


Fig. a (Video output terminal output waveform)

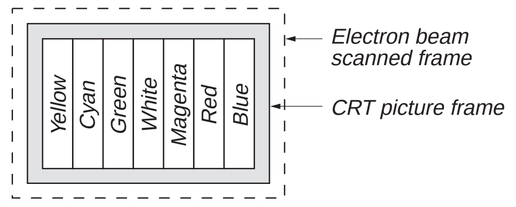

Yellow
Cyan
Green
White
Magenta
Red
Blue
Electron beam scanned frame
CRT picture frame

Fig.b (Picture on monitor TV)

When indicating parts by reference number, pleas include the board name.

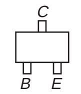
CD-203 BOARD

C450	B-4	CN451	D-9
C451	A-4	IC450	D-4
C452	B-1	IC451	A-1
C453	B-4	L450	A-4
C454	B-2	L451	E-2
C455	B-4	Q450	B-4
C456	B-2	R450	B-4
C457	B-2	R451	B-4
C458	A-2	R452	A-2
C459	A-1	R453	A-2
C460	A-1	R454	B-4
C461	B-4	R455	A-2
C462	A-1	R456	A-1
C465	B-4	R457	A-1
C467	A-1	R458	A-1
C468	A-4	R459	A-1
C469	A-1	R460	A-1
C471	E-1	R461	A-1
C472	E-1	R462	A-1
C473	E-1	R463	A-1
C474	E-1	R464	B-4
C475	A-1	R465	A-1
C476	A-2	R466	B-4
C476	E-2	R467	B-4
C477	E-1	SE450	D-2
CN450	E-4	SE451	E-1

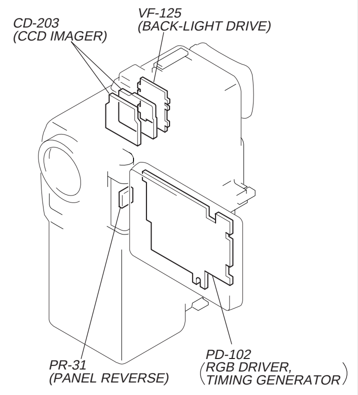
For printed wiring boards

- This board is six-layer print board. However, the patterns of layers two to five have not been included in the diagram.
- Chip parts

Transistor

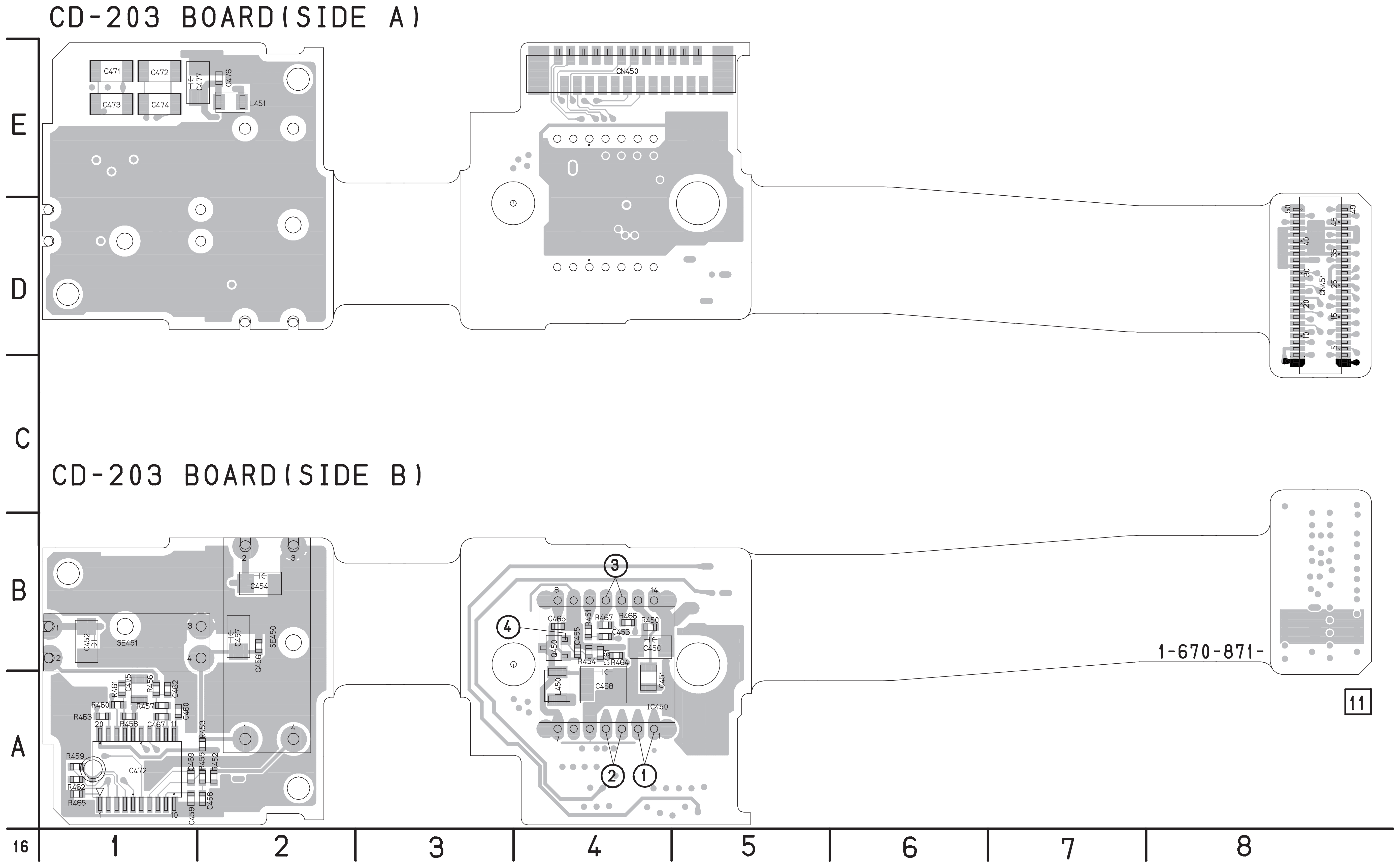


There are few cases that the part printed on this diagram isn't mounted in this model.


CD-203
(CCD IMAGER)
VF-125
(BACK-LIGHT DRIVE)
PR-31
(PANEL REVERSE)
PD-102
(RGB DRIVER, TIMING GENERATOR)

CD-203 (CCD IMAGER) PRINTED WIRING BOARD

— Ref. No. CD-203 Board; 4,000 Series —


CD-203 BOARD(SIDE A)
CD-203 BOARD(SIDE B)
E
D
C
B
A
16
1
2
3
4
5
6
7
8
C471
C472
C473
C474
C477
C476
L451
CN450
CN451
SE451
SE450
C452
C454
C456
C457
IC451
C472
R459
R462
R465
R463
R460
R461
R458
R457
C467
C462
C475
R453
C458
R455
R452
C476
C459
C469
C460
C465
R467
R466
C455
R451
R464
R454
Q450
C453
C461
C450
C451
L450
C468
IC450
①
②
③
④
1-670-871-
11

CD-203 BOARD

CCD IMAGER

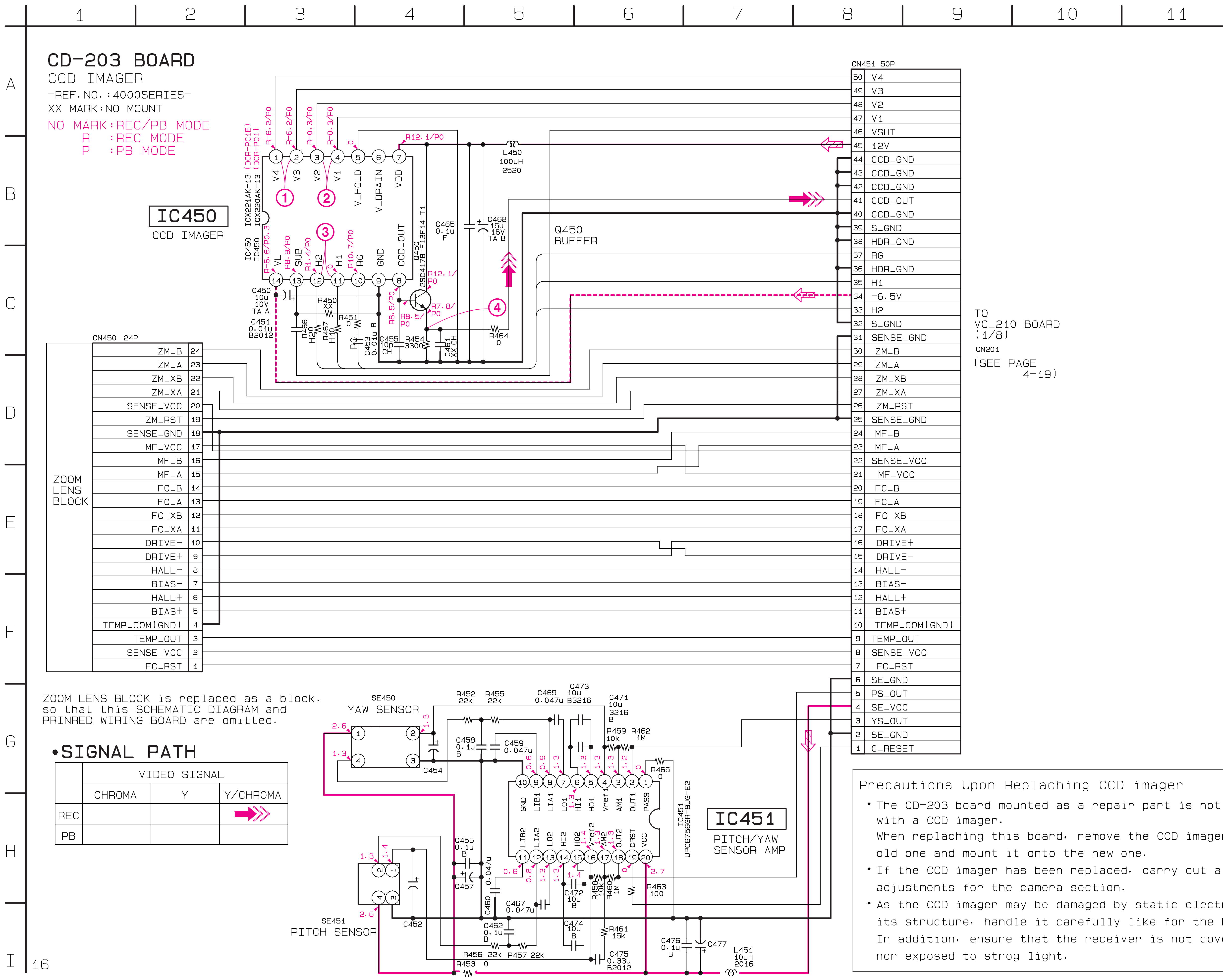
-REF.NO.:4000SERIES-

XX MARK:NO MOUNT

NO MARK:REC/PB MODE

R :REC MODE

P :PB MODE


1
2
3
4
5
6
7
8
9
10
11
12
A
B
C
D
E
F
G
H
I
IC450
CCD IMAGER
IC450 ICX221AK-13 (DCR-PC1E)
IC450 ICX220AK-13 (DCR-PC1)
V4
V3
V2
V1
V_HOLD
V_DRAIN
VDD
VL
SUB
H2
H1
RG
GND
CCD_OUT
Q450 2SC4178-F13F14-T1
Q450
BUFFER
L450
100uH
2520
C465
0.1u
F
C458
15u
16V
TA B
C450
10u
10V
TA A
C451
0.01u
B2012
R450
XX
R451
0
R454
330
R464
0
C455
10p
CH
C453
0.01u
B
C461
XX CH
CN450 24P
CN451 50P
ZOOM LENS BLOCK
ZM_B
ZM_A
ZM_XB
ZM_XA
SENSE_VCC
ZM_RST
SENSE_GND
MF_VCC
MF_B
MF_A
FC_B
FC_A
FC_XB
FC_XA
DRIVE-
DRIVE+
HALL-
BIAS-
HALL+
BIAS+
TEMP_COM(GND)
TEMP_OUT
SENSE_VCC
FC_RST
V4
V3
V2
V1
VSHT
12V
CCD_GND
CCD_OUT
S_GND
HDR_GND
RG
H1
-6.5V
H2
SENSE_GND
ZM_B
ZM_A
ZM_XB
ZM_XA
ZM_RST
MF_B
MF_A
MF_VCC
FC_B
FC_A
FC_XB
FC_XA
DRIVE+
DRIVE-
HALL-
BIAS-
HALL+
BIAS+
TEMP_COM(GND)
TEMP_OUT
SENSE_VCC
FC_RST
SE_GND
PS_OUT
SE_VCC
YS_OUT
SE_GND
C_RESET
TO
VC-210 BOARD
(1/8)
CN201
(SEE PAGE
4-19)
SE450
YAW SENSOR
SE451
PITCH SENSOR
IC451
UPC6756GR-BJG-E2
IC451
PITCH/YAW
SENSOR AMP
GND
LIB1
LIA1
LO1
HI1
HO1
Vref1
AM1
OUT1
PASS
LIB2
LIA2
LO2
HI2
HO2
Vref2
AM2
OUT2
CRST
VCC
R452 22k
R455 22k
C469 0.047u
C473 10u B3216
C471 10u 3216 B
R459 10k
R462 1M
R465 0
R463 100
R461 15k
R456 22k
R457 22k
R453 0
C458 0.1u B
C459 0.047u
C454
C456 0.1u B
C457
C460 0.047u
C452
C462 0.1u B
C467 0.047u
C472 10u B
C474 10u B
C475 0.33u B2012
C476 0.1u B
C477
L451 10uH 2016
R458 10k
R460 1M

ZOOM LENS BLOCK is replaced as a block, so that this SCHEMATIC DIAGRAM and PRINRED WIRING BOARD are omitted.

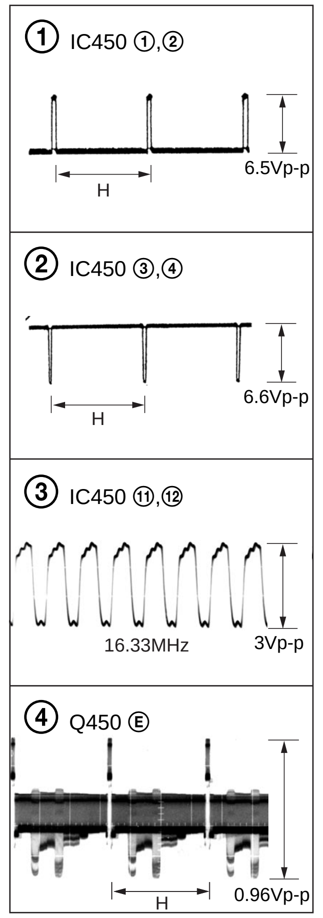
•SIGNAL PATH

	VIDEO SIGNAL		
	CHROMA	Y	Y/CHROMA
REC			➡
PB			

Precautions Upon Replacing CCD imager

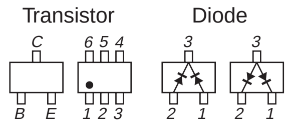
- The CD-203 board mounted as a repair part is not equipped with a CCD imager. When replacing this board, remove the CCD imager from the old one and mount it onto the new one.
- If the CCD imager has been replaced, carry out all the adjustments for the camera section.
- As the CCD imager may be damaged by static electrictiy from its structure, handle it carefully like for the MOS IC. In addition, ensure that the receiver is not covered with dusts nor exposed to strog light.

CD-203 BOARD
CAMERA REC

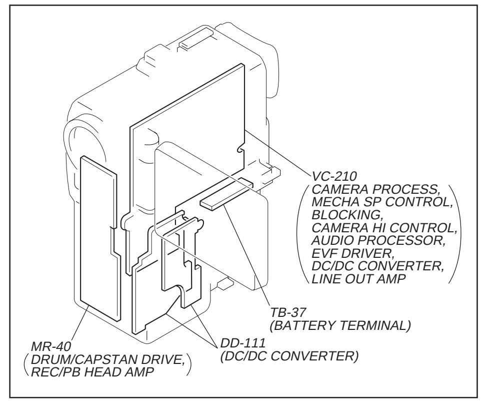


For printed wiring boards

- This board is eight-layer print board. However, the patterns of layers two to seven have not been included in the diagram.
- Chip parts



There are few cases that the part printed on this diagram isn't mounted in this model.

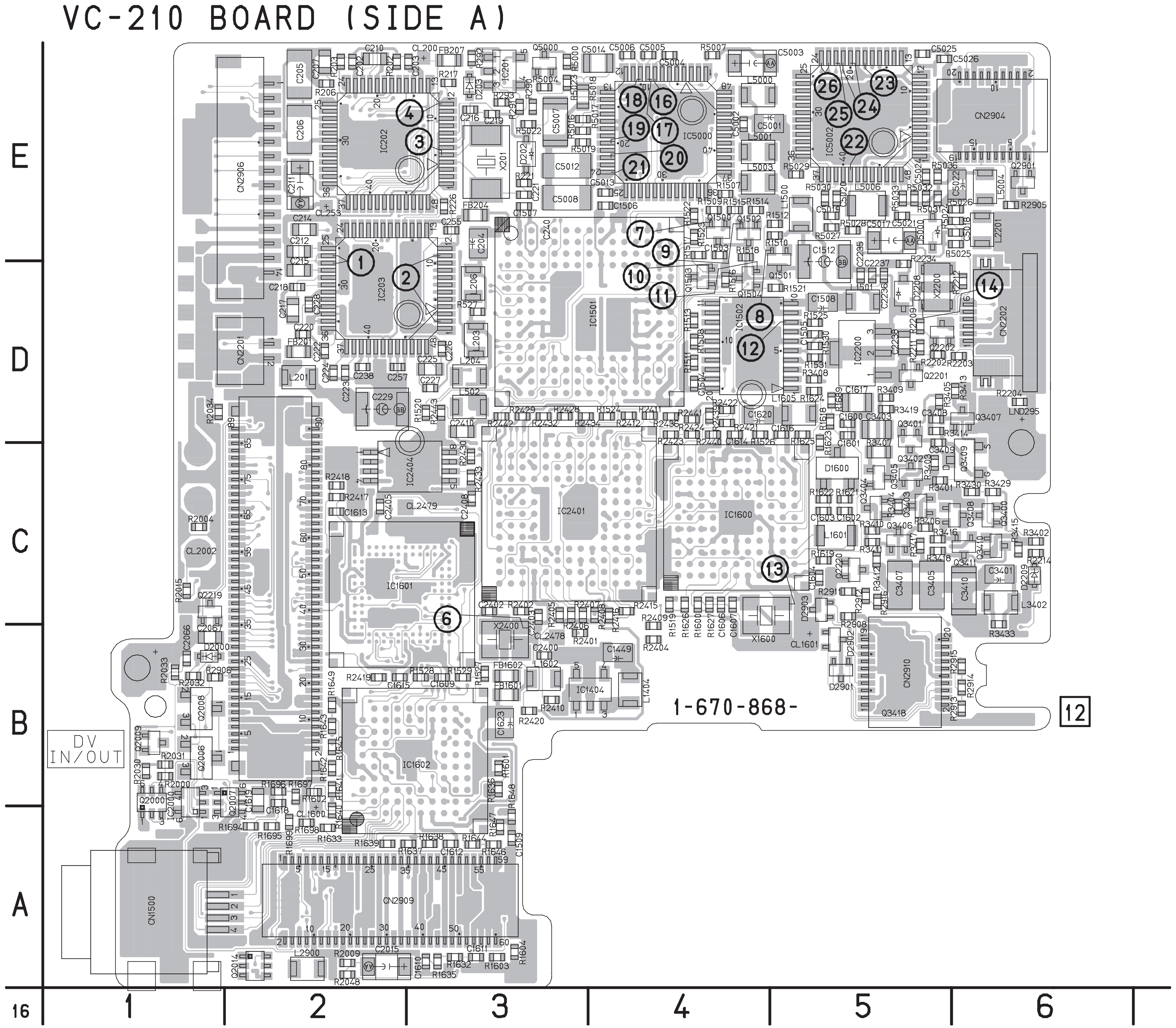

VC-210
(CAMERA PROCESS, MECHA SP CONTROL, BLOCKING, CAMERA HI CONTROL, AUDIO PROCESSOR, EVF DRIVER, DC/DC CONVERTER, LINE OUT AMP)
TB-37
(BATTERY TERMINAL)
MR-40
(DRUM/CAPSTAN DRIVE, REC/PB HEAD AMP)
DD-111
(DC/DC CONVERTER)

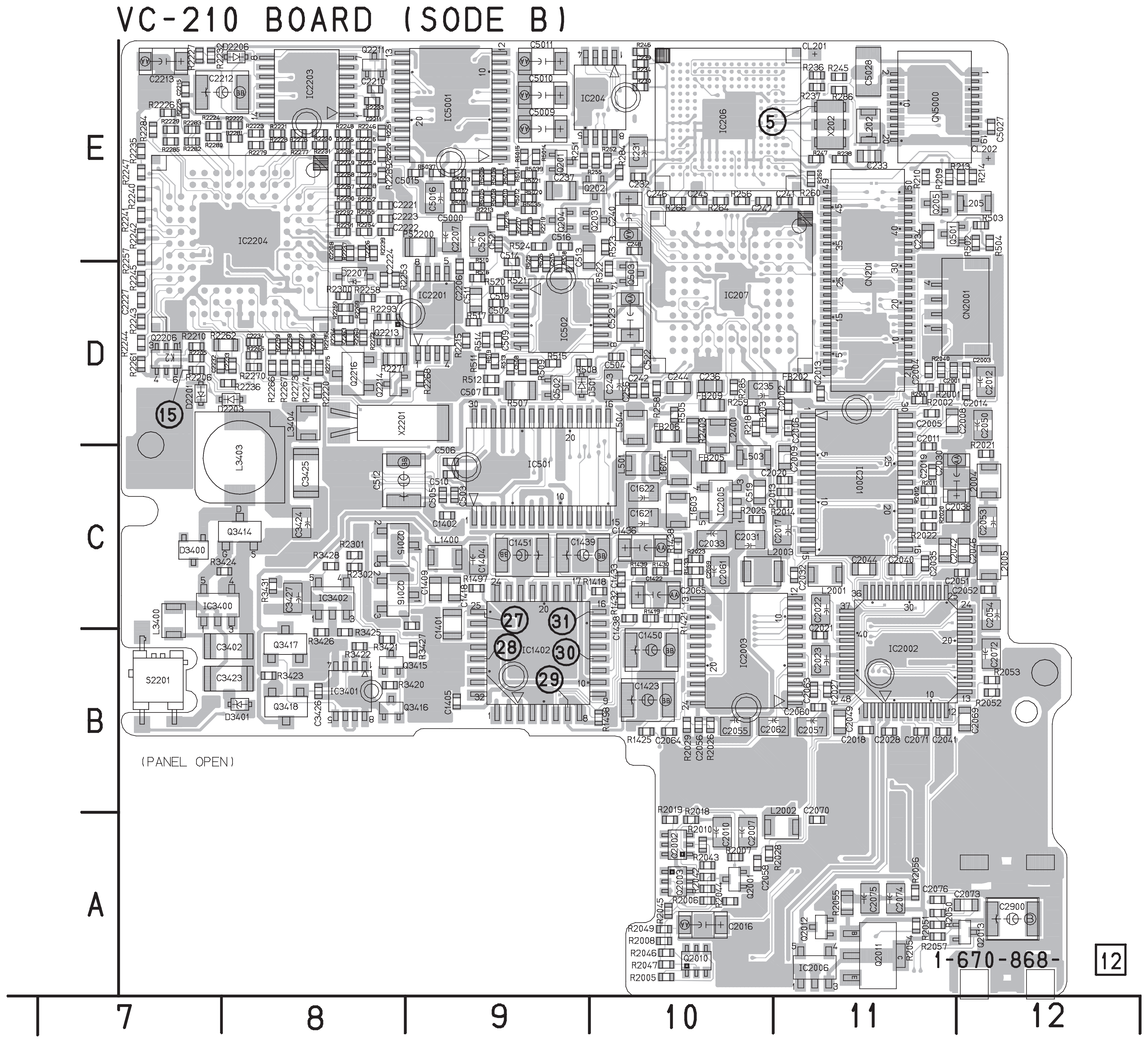
VC-210 BOARD (SIDE A)

C202	F-2
C203	F-3
C204	E-3
C205	F-2
C206	E-2
C207	F-2
C210	F-2
C211	E-2
C212	E-2
C214	E-2
C215	D-2
C216	E-3
C217	D-2
C218	D-2
C219	E-3
C220	D-2
C221	E-3
C222	D-2
C223	D-2
C224	D-2
C225	D-3
C226	D-3
C227	D-3
C228	D-2
C229	D-2
C237	E-9
C238	D-2
C255	E-3
C257	D-2
C502	D-9
C503	C-9
C505	C-9
C506	C-9
C507	D-9
C508	D-9
C509	D-9
C510	C-9
C511	D-9
C512	C-9
C514	D-9
C515	D-9
C516	E-9
C518	D-9
C520	E-9
C521	E-9
C1401	B-9
C1402	C-9
C1404	C-9
C1405	B-9
C1409	C-9
C1418	C-9
C1439	C-9
C1449	B-4
C1451	C-9
C1503	E-4
C1504	D-4
C1505	D-5
C1506	E-4
C1507	E-3
C1508	D-5
C1509	A-3
C1512	D-5
C1600	D-5
C1601	D-5
C1602	C-5
C1603	C-5
C1604	C-5
C1606	C-4
C1607	C-4
C1609	B-3
C1610	A-3
C1611	A-3
C1612	A-3
C1613	C-2
C1614	D-4
C1615	B-2
C1616	D-5
C1617	D-5
C1618	B-2
C1619	B-2
C1620	D-4
C1623	B-3
C2015	A-2
C2030	C-12
C2038	C-12
C2046	C-12
C2051	C-12
C2052	C-12
C2053	C-12
C2054	C-12
C2066	B-1
C2067	B-1
C2206	D-9
C2207	E-9
C2208	E-8
C2210	E-8
C2211	E-8
C2212	E-8
C2213	F-7
C2215	E-7
C2216	E-8
C2217	E-8
C2218	E-8
C2219	E-8
C2220	E-8
C2221	E-8
C2222	E-8
C2223	E-8
C2224	D-8
C2226	E-8
C2227	D-7
C2232	D-8
C2233	D-8
C2234	D-8
C2235	D-5
C2236	D-5
C2237	D-5
C2238	D-5
C2400	B-3
C2402	C-3
C2403	C-3
C2405	C-2
C2408	C-3
C2410	D-3
C3401	C-6
C3402	B-8
C3403	D-5
C3405	C-5
C3407	C-5
C3408	D-5
C3409	C-5
C3410	C-6
C3423	B-8
C3424	C-8
C3425	C-8
C3426	B-8
C3427	C-8
C5000	E-9
C5001	E-4
C5002	E-4
C5003	F-4
C5004	F-4
C5005	F-4
C5006	F-4
C5007	E-3
C5008	E-3
C5009	E-9
C5010	E-9
C5011	F-9
C5012	E-3
C5013	E-4
C5014	F-4
C5015	E-9
C5016	E-9
C5017	E-5
C5018	E-6
C5019	E-5
C5020	E-5
C5021	E-5
C5022	E-6
C5023	E-5
C5024	E-5
C5025	F-5
C5026	F-5
CN1500	A-1
CN2201	D-2
CN2202	D-6
CN2904	E-6
CN2906	E-2
CN2908	C-2
CN2909	A-2
CN2910	B-5
D202	E-3
D203	E-3
D501	D-9
D1600	C-5
D2000	B-1
D2201	D-7
D2203	D-8
D2206	F-8
D2207	D-8
D2208	D-5
D2209	C-6
D2901	B-5
D2902	B-5
D2903	C-5
D3400	C-7
D3401	B-8
D5000	E-5
FB201	D-2
FB204	E-3
FB207	F-3
FB1601	B-3
FB1602	B-3
IC201	F-3
IC202	E-2
IC203	D-2
IC501	C-9
IC502	D-9
IC1402	B-9
IC1404	B-4
IC1501	D-4
IC1502	D-4
IC1600	C-4
IC1601	C-2
IC1602	B-3
IC2000	B-1
IC2200	D-5
IC2201	D-9
IC2203	E-8
IC2204	E-8
IC2401	C-3
IC2404	C-3
IC3400	C-8
IC3401	B-8
IC3402	C-8
IC5000	E-4
IC5001	E-9
IC5002	E-5
L201	D-2
L203	D-3
L204	D-3
L206	D-3
L502	D-3
L1400	C-9
L1404	B-4
L1500	E-5
L1501	D-5
L1601	C-5
L1602	B-3
L1605	D-5
L2001	C-11
L2004	C-12
L2005	C-12
L2201	E-6
L2900	A-2
L3400	C-7
L3402	C-6
L3403	C-8
L3404	D-8
L5000	E-4
L5001	E-4
L5003	E-4
L5004	E-6
L5006	E-5
PS2200	E-9
Q201	E-9
Q204	E-9
Q502	D-9
Q1500	E-4
Q1501	D-5
Q1502	E-4
Q1503	D-4
Q1504	D-4
Q2006	B-1
Q2007	B-2
Q2008	B-1
Q2009	B-1
Q2014	A-2
Q2015	C-8
Q2016	C-8
Q2201	D-5
Q2202	D-5
Q2206	D-7
Q2211	F-8
Q2213	D-8
Q2214	D-8
Q2216	D-8
Q2219	C-1
Q2220	C-5
Q2901	E-6
Q3200	B-1
Q3400	C-6
Q3401	C-5
Q3402	C-5
Q3403	C-5
Q3404	C-5
Q3405	C-5
Q3406	C-5
Q3407	D-6
Q3408	C-6
Q3409	C-6
Q3410	C-6
Q3411	C-6
Q3414	C-8
Q3415	B-8
Q3416	B-8
Q3417	B-5
Q3417	B-8
Q3418	B-5
Q3418	B-8
Q5000	F-3
R202	F-2
R203	F-2
R206	E-2
R217	E-3
R221	E-3
R226	E-3
R251	E-9
R290	E-3
R291	E-3
R292	F-3
R293	E-3
R507	D-9
R508	D-9
R509	D-9
R510	D-9
R511	D-9
R512	D-9
R513	D-9
R514	D-9
R515	D-9
R516	D-9
R517	D-9
R518	D-9
R519	D-9
R520	D-9
R521	D-9
R524	E-9
R525	D-9
R526	D-9
R527	D-3
R1497	C-9
R1507	E-4
R1508	D-4
R1509	E-4
R1510	E-5
R1511	D-4
R1512	E-5
R1513	D-4
R1514	E-4
R1515	E-4
R1516	D-4
R1517	E-4
R1518	D-4
R1519	C-4
R1520	D-3
R1521	D-5
R1522	E-4
R1523	E-4
R1524	D-4
R1525	D-5
R1526	D-4
R1527	B-3
R1528	B-3
R1529	B-3
R1530	D-5
R1531	D-5
R1600	C-4
R1601	B-3
R1602	B-2
R1603	A-3
R1604	A-3
R1618	D-5
R1619	C-5
R1621	C-5
R1622	C-5
R1623	C-5
R1624	D-5
R1625	D-5
R1626	C-4
R1627	C-4
R1632	A-3
R1633	A-2
R1635	A-3
R1636	B-3
R1637	A-3
R1638	A-3
R1639	A-2
R1640	A-2
R1641	B-2
R1642	B-2
R1643	B-2
R1644	A-3
R1645	B-2
R1646	A-3
R1647	A-3
R1648	A-3
R1649	B-2
R1689	D-5
R1694	A-2
R1695	A-2
R1696	B-2
R1697	B-2
R1698	A-2
R1699	A-2
R2000	B-1
R2004	C-1
R2009	A-2
R2011	C-11
R2012	C-11
R2013	C-11
R2014	C-11
R2015	C-1
R2020	C-11
R2021	C-12
R2022	C-11
R2030	B-1
R2031	B-1
R2032	B-1
R2033	B-1
R2034	D-1
R2048	A-2
R2202	D-5
R2203	D-6
R2204	D-6
R2205	D-7
R2206	D-7
R2209	D-5
R2210	D-7
R2211	D-5
R2212	D-6
R2213	E-9
R2214	C-6
R2215	D-9
R2216	E-9
R2217	E-9
R2218	E-9
R2219	E-9
R2220	D-8
R2221	E-8
R2222	E-8
R2223	E-8
R2224	E-7
R2225	E-7
R2226	E-7
R2227	F-7
R2228	E-8
R2229	E-7
R2230	E-8
R2231	E-8
R2232	F-7
R2233	E-8
R2234	D-5
R2235	E-7
R2236	D-8
R2237	E-8
R2239	E-8
R2240	E-7
R2241	E-7
R2242	E-7
R2243	D-7
R2244	D-7
R2245	D-7
R2246	E-8
R2247	E-7
R2248	E-8
R2249	E-8
R2250	E-8
R2251	E-8
R2252	E-8
R2253	D-8
R2254	E-8
R2255	E-8
R2256	E-8
R2257	D-7
R2258	D-8
R2259	D-8
R2260	D-8
R2261	D-7
R2262	D-8
R2263	D-8
R2264	D-8
R2265	D-8
R2266	D-8
R2267	D-8
R2268	D-9
R2269	D-8
R2270	D-8
R2271	D-8
R2272	D-8
R2273	D-8
R2274	D-8
R2275	D-8
R2277	E-8
R2278	E-8
R2279	E-8
R2280	E-7
R2281	E-8
R2282	E-7
R2283	E-7
R2284	E-7
R2285	E-7
R2286	E-8
R2287	E-8
R2288	E-8
R2289	E-8
R2290	E-8
R2291	E-8
R2292	E-8
R2293	D-8
R2295	D-8
R2296	D-8
R2297	D-8
R2298	D-8
R2299	D-8
R2300	D-8
R2301	C-8
R2302	C-8
R2401	B-3
R2402	C-3
R2404	B-4
R2405	C-3
R2406	C-3
R2407	C-3
R2408	C-4
R2409	B-4
R2410	B-3
R2411	D-4
R2412	D-4
R2415	C-4
R2416	C-4
R2417	C-2
R2418	C-2
R2419	B-2
R2420	B-3
R2421	D-4
R2422	D-4
R2423	D-4
R2424	D-4
R2428	D-3
R2429	D-3
R2430	C-3
R2432	D-3
R2433	C-3
R2434	D-3
R2436	D-4
R2439	D-4
R2440	D-4
R2441	D-4
R2442	D-3
R2443	D-3
R2905	E-6
R2906	B-1
R2908	C-5
R2911	C-5
R2912	C-5
R2913	B-6
R2914	B-6
R2915	B-6
R2916	C-5
R3401	C-5
R3402	C-6
R3403	C-5
R3404	C-5
R3405	D-5
R3406	C-5
R3407	C-5
R3408	D-5
R3409	D-5
R3410	C-5
R3411	C-5
R3412	C-5
R3413	D-6
R3414	D-5
R3415	C-6
R3416	C-5
R3417	C-5
R3418	C-5
R3419	D-5
R3420	B-8
R3421	B-8
R3422	B-8
R3423	B-8
R3424	C-8
R3425	B-8
R3426	B-8
R3427	B-9
R3428	C-8
R3429	C-6
R3430	C-6
R3431	C-8
R3433	B-6
R5000	F-3
R5001	E-9
R5002	E-9
R5003	E-9
R5004	E-3
R5005	E-9
R5006	E-9
R5007	F-4
R5008	E-9
R5009	E-9
R5010	E-9
R5011	E-9
R5012	E-9
R5013	E-9
R5014	E-9
R5015	E-9
R5016	E-3
R5017	E-3
R5018	E-3
R5019	E-3
R5020	E-9
R5021	E-9
R5022	E-3
R5023	E-3
R5024	E-6
R5025	E-6
R5026	E-6
R5027	E-5
R5028	E-5
R5029	E-5
R5030	E-5
R5031	E-5
R5032	E-5
R5033	E-5
R5035	E-9
R5036	E-5
R5037	E-9
R5039	E-9
S2201	B-7
X201	E-3
X1600	C-4
X2200	D-5
X2201	D-8
X2400	B-3

VC-210 (CAMERA PROCESS, MECHA SP CONTROL, BLOCKING, CAMERA HI CONTROL, AUDIO PROCESSOR, EVF DRIVER, DC/DC CONVERTER, LINE OUT AMP) PRINTED WIRING BOARD

— Ref. No. VC-210 Board; 10,000 Series —




VC-210 BOARD (SODE B)
E
D
C
B
A
7
8
9
10
11
12
(PANEL OPEN)
1-670-868-
12
IC2204
IC2203
IC5001
IC204
IC206
IC207
IC2201
IC2502
IC501
IC2002
IC2003
IC2001
IC3400
IC3402
IC3401
IC2006
CN2001
CN5000
X2201
L3403
S2201
15
5
27
28
29
30
31

VC-210 BOARD (SIDE B)

C231	E-10
C232	E-10
C233	E-11
C234	E-11
C235	D-10
C236	D-10
C239	F-10
C240	E-10
C241	E-11
C242	D-10
C243	D-10
C244	D-10
C245	E-10
C246	E-10
C247	E-10
C248	E-10
C256	D-10
C504	D-10
C513	D-10
C519	C-10
C522	D-10
C523	D-10
C1422	C-10
C1423	B-10
C1433	C-10
C1436	C-10
C1438	C-10
C1450	B-10
C1621	C-10
C1622	C-10
C2001	D-11
C2002	D-11
C2003	D-12
C2004	D-11
C2005	D-11
C2006	D-11
C2007	A-10
C2008	D-11
C2009	C-11
C2010	A-10
C2011	C-11
C2012	D-12
C2013	D-11
C2014	D-12
C2016	A-10
C2017	C-11
C2018	B-11
C2019	C-11
C2020	C-11
C2021	B-11
C2022	C-11
C2023	B-11
C2028	B-11
C2031	C-10
C2032	C-11
C2033	C-10
C2035	C-11
C2040	C-11
C2041	B-11
C2042	C-11
C2044	C-11
C2049	B-11
C2050	D-12
C2055	B-10
C2056	B-10
C2057	B-11
C2058	A-10
C2059	C-10
C2060	B-11
C2061	C-10
C2062	B-11
C2063	B-11
C2064	B-10
C2065	C-10
C2069	B-12
C2070	A-11
C2071	B-11
C2072	B-12
C2073	A-12
C2074	A-11
C2075	A-11
C2076	A-11
C2900	A-12
C5027	E-12
C5028	E-11
CN201	D-11
CN2001	D-12
CN5000	E-11
FB202	D-11
FB203	D-11
FB205	C-10
FB206	D-10
FB209	D-10
IC204	E-10
IC206	E-10
IC207	D-10
IC2001	C-11
IC2002	B-11
IC2003	B-10
IC2005	C-10
IC2006	A-11
L202	E-11
L205	E-12
L501	C-10
L503	C-10
L504	D-10
L1603	C-10
L1604	C-10
L2002	A-11
L2003	C-10
L2400	D-10
Q202	E-10
Q203	E-10
Q205	E-11
Q501	E-11
Q503	D-10
Q2001	A-10
Q2002	A-10
Q2003	A-10
Q2010	A-10
Q2011	A-11
Q2012	A-11
Q2013	A-12
R209	E-11
R210	E-11
R213	E-12
R214	E-12
R218	D-10
R230	E-10
R234	E-10
R236	E-11
R237	E-11
R238	E-11
R245	E-11
R246	F-10
R247	E-11
R250	E-11
R252	E-10
R255	E-10
R256	E-10
R258	D-10
R259	D-10
R260	E-11
R264	E-10
R266	E-10
R284	E-10
R285	D-10
R286	E-11
R502	E-12
R503	E-12
R504	E-12
R505	D-10
R522	D-10
R523	E-10
R1418	C-10
R1419	C-10
R1421	C-10
R1425	B-10
R1430	C-10
R1432	C-10
R1433	C-10
R1438	C-10
R1439	C-10
R1498	B-10
R2001	D-11
R2002	D-11
R2005	A-10
R2006	A-10
R2007	A-10
R2008	A-10
R2010	A-10
R2018	A-10
R2019	A-10
R2023	C-10
R2025	C-10
R2026	B-10
R2027	B-11
R2028	A-10
R2029	B-10
R2040	D-11
R2041	D-11
R2042	A-10
R2043	A-10
R2044	A-10
R2045	A-10
R2046	A-10
R2047	A-10
R2049	A-10
R2050	A-11
R2051	A-11
R2052	B-12
R2053	B-12
R2054	A-11
R2055	A-11
R2056	A-11
R2057	A-11
R2403	D-10
X202	E-11

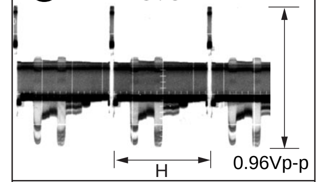
CAMERA/VIDEO/AUDIO PROCESSOR
VC-210

For schematic diagram
- Refer to page 4-13 for printed wiring board.

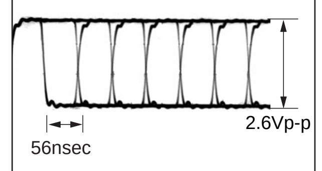
VC-210 BOARD (1/8)

CAMERA REC

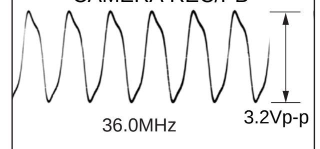
① IC203 ㉖,㉗



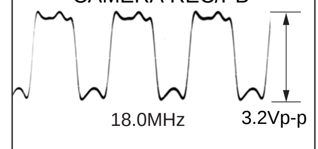
② IC203 ②-⑪



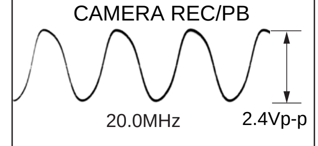
③ IC202 ⑤
CAMERA REC/PB

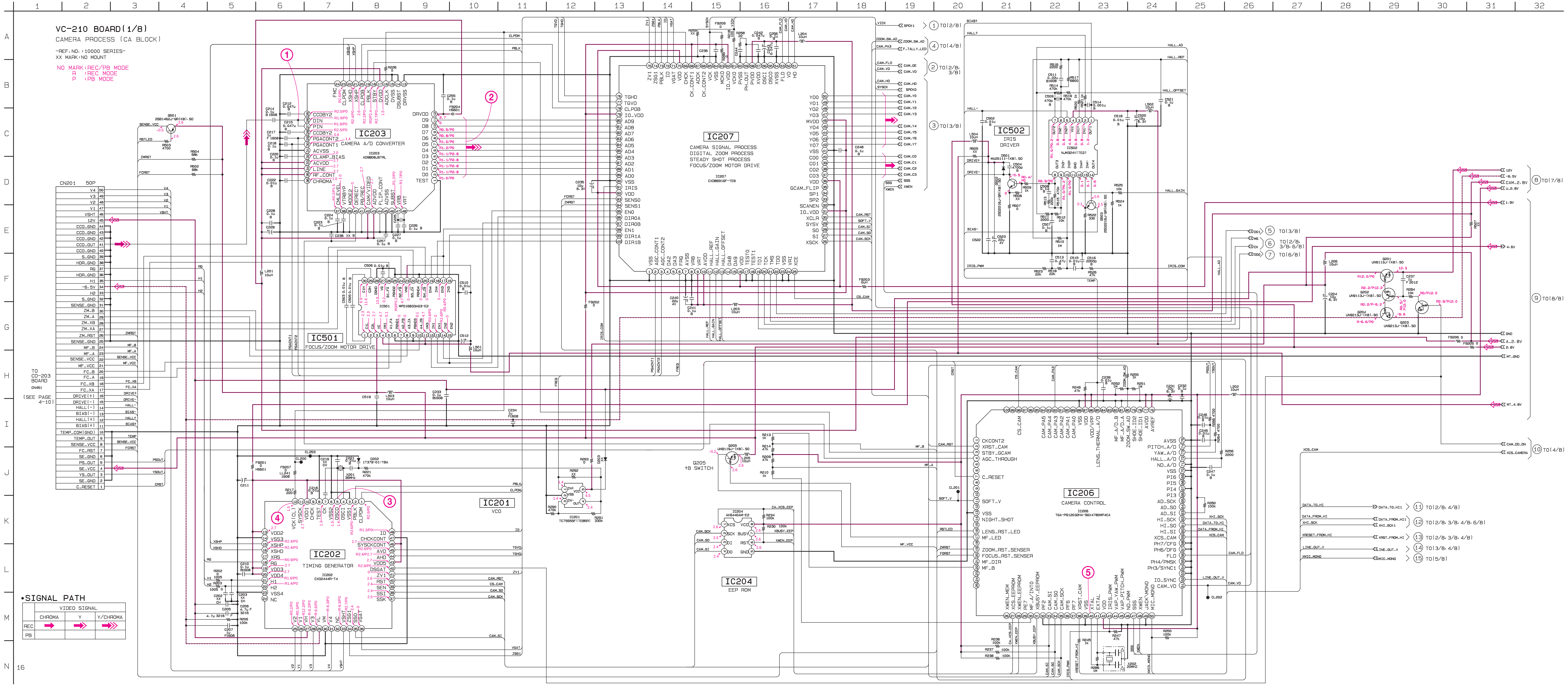


④ IC202 ⑫
CAMERA REC/PB

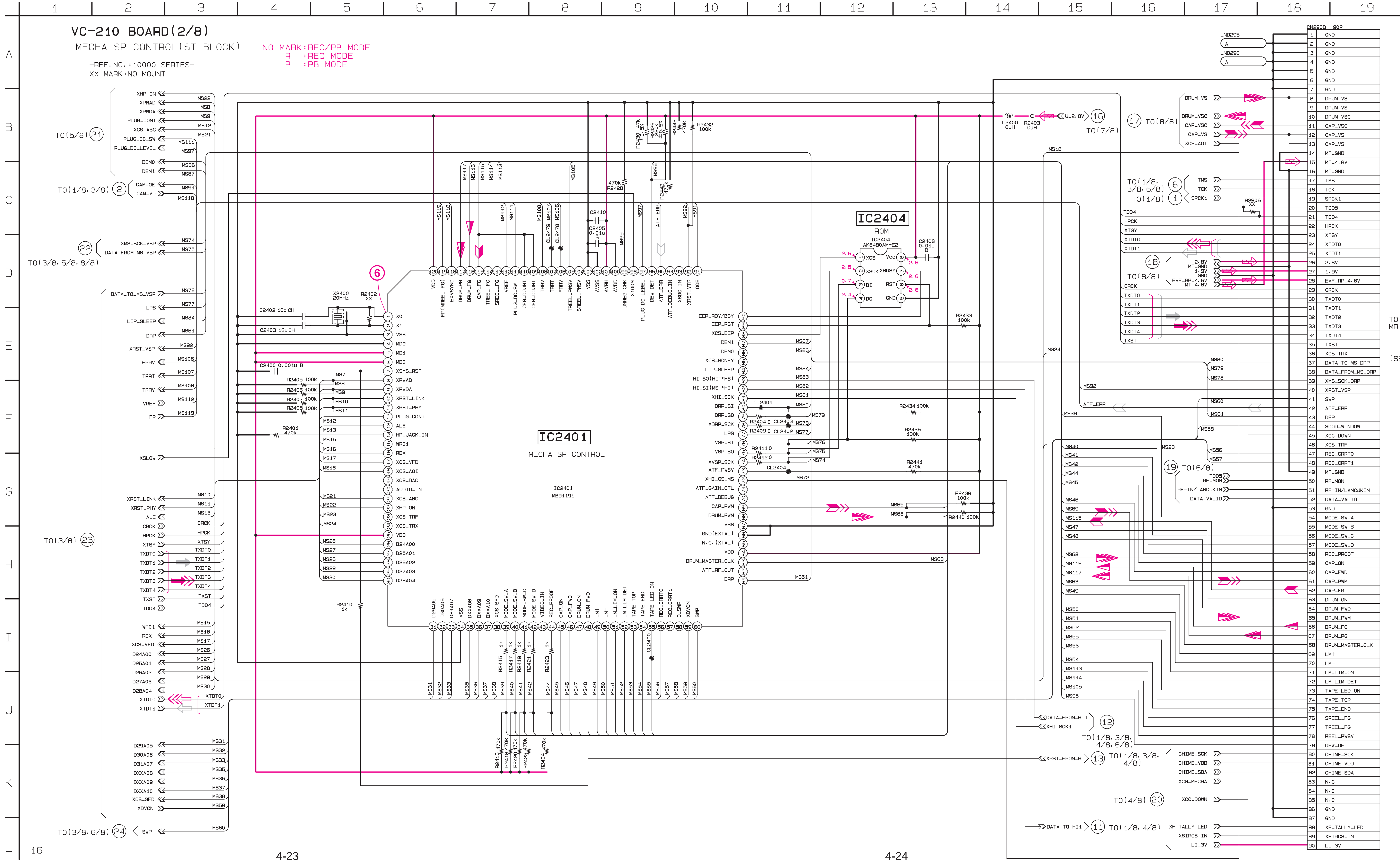


⑤ IC206 ㊵ (X202)
CAMERA REC/PB




VC-210 BOARD(1/8)
CAMERA PROCESS (CA BLOCK)
-REF.NO.:10000 SERIES-
XX MARK:NO MOUNT
NO MARK:REC/PB MODE
R :REC MODE
P :PB MODE
IC203
CAMERA A/D CONVERTER
IC207
CAMERA SIGNAL PROCESS
DIGITAL ZOOM PROCESS
STEADY SHOT PROCESS
FOCUS/ZOOM MOTOR DRIVE
IC502
IRIS DRIVER
IC501
FOCUS/ZOOM MOTOR DRIVE
IC202
TIMING GENERATOR
IC201
VCO
IC206
CAMERA CONTROL
IC204
EEP ROM
Q205
+B SWITCH
CN201 50P
TO CD-203 BOARD CN451
(SEE PAGE 4-10)
TO(2/8)
TO(4/8)
TO(2/8, 3/8)
TO(3/8)
TO(7/8)
TO(8/8)
TO(4/8)
TO(2/8, 4/8)
TO(2/8, 3/8, 4/8, 5/8)
TO(2/8, 3/8, 4/8)
TO(3/8, 4/8)
TO(5/8)
SIGNAL PATH
VIDEO SIGNAL
CHROMA
Y
Y/CHROMA
REC
PB

For schematic diagram
- Refer to page 4-13 for printed wiring board.


VC-210 BOARD(2/8)
MECHA SP CONTROL(ST BLOCK)
-REF.NO.:10000 SERIES-
XX MARK:NO MOUNT
NO MARK:REC/PB MODE
R :REC MODE
P :PB MODE
IC2401
MECHA SP CONTROL
IC2404
ROM
TO(5/8) ㉑
TO(1/8,3/8) ②
TO(3/8,5/8,8/8) ㉒
TO(3/8) ㉓
TO(3/8,6/8) ㉔
TO(7/8) ⑯
TO(8/8) ⑰
TO(1/8,3/8,6/8) ⑥
TO(1/8) ①
TO(8/8) ⑱
TO(6/8) ⑲
TO(1/8,3/8,4/8,6/8) ⑫
TO(1/8,3/8,4/8) ⑬
TO(4/8) ⑳
TO(1/8,4/8) ⑪
TO MA-40 BOARD (1/2)
CN2505
(SEE PAGE 4-51)
CN2508 90P
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
A B C D E F G H I J K L

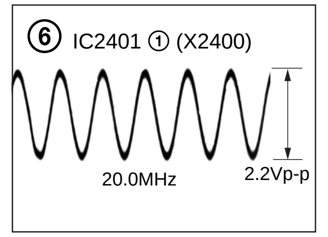
•SIGNAL PATH

	REC	REC/PB	PB
Drum speed servo		➡	
Drum phase servo		➡	
Drum servo (speed and phase)		➡	
Capstan speed servo		➡	
Capstan servo (speed and phase)		➡	
Ref.signal			⇨

•SIGNAL PATH

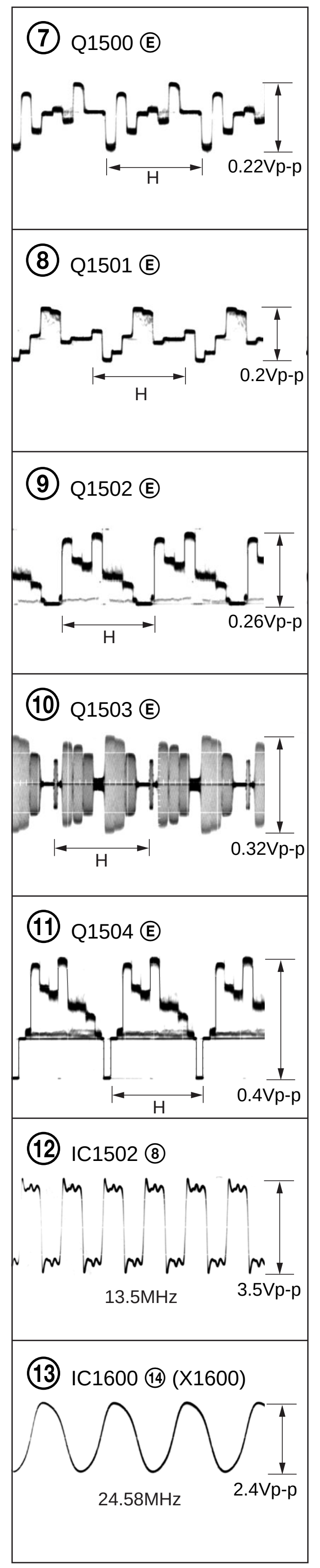
	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
REC			➡	➡
PB			⇨	

VC-210 BOARD (2/8)
CAMERA REC/PB



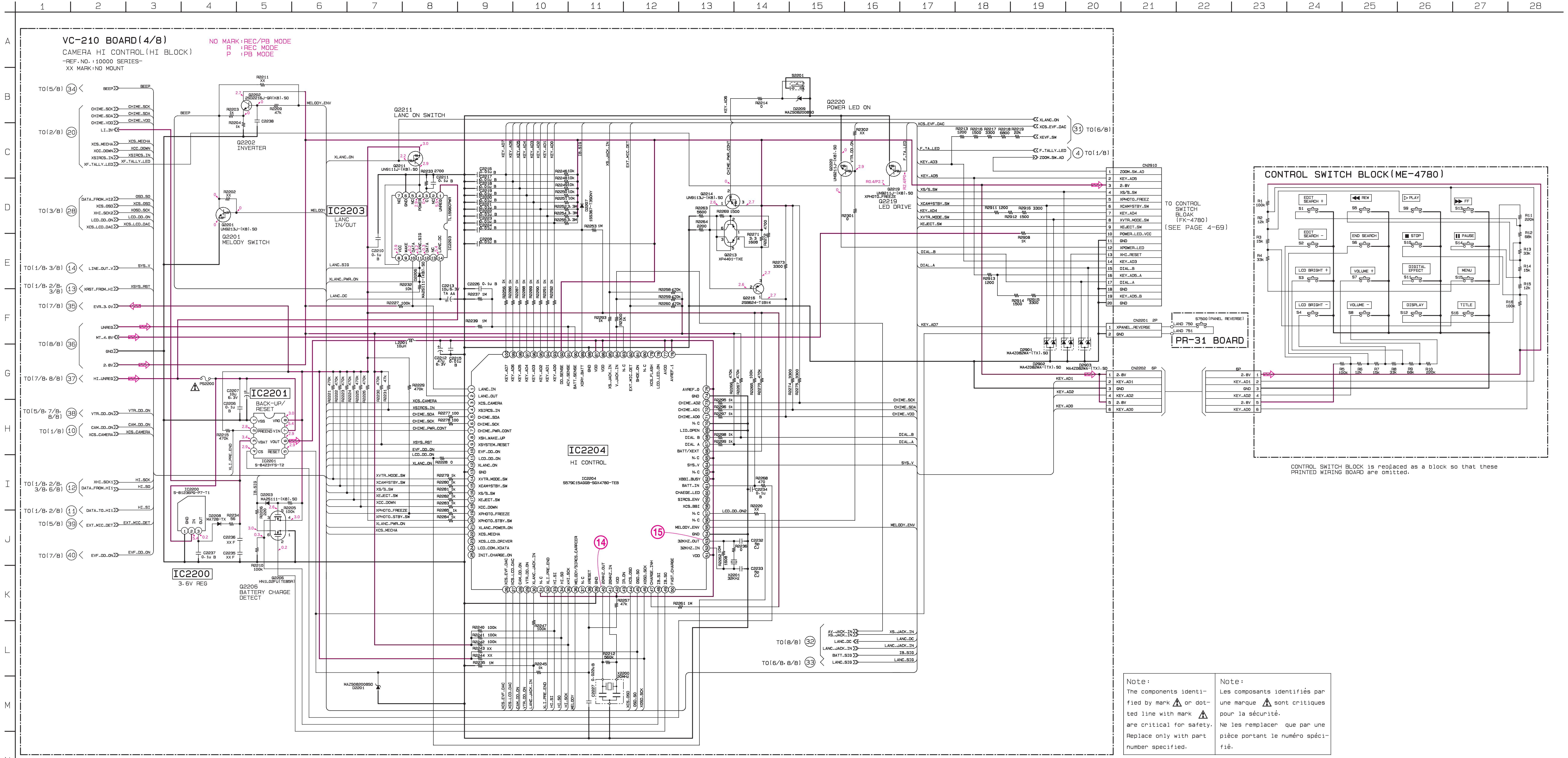
For schematic diagram
- Refer to page 4-14 for printed wiring board.

VC-210 BOARD (3/8)
CAMERA REC/PB



VC-210 BOARD(3/8)
BLOCKING(J-CORE BLOCK)
-REF.NO.:10000 SERIES-
XX MARK:NO MOUNT
NO MARK:REC/PB MODE
R :REC MODE
P :PB MODE
IC1600
DCT/IDCT ESTIMATION
IC1602
DV INTERFACE
IC1501
BLOCKING
IC1601
ECC/PTG DESHUFFLING
IC1502
CHARACTER GENERATOR
DV IN/OUT
TO PD-102 BOARD (1/2) CN8000 (SEE PAGE 4-57)
•SIGNAL PATH
VIDEO SIGNAL
CHROMA
Y
Y/CHROMA
AUDIO SIGNAL
REC
PB

For schematic diagram
- Refer to page 4-14 for printed wiring board.

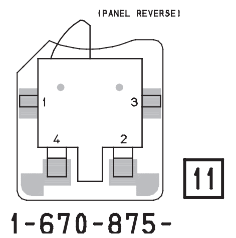

VC-210 BOARD(4/8)
CAMERA HI CONTROL(HI BLOCK)
-REF.NO.:10000 SERIES-
XX MARK:NO MOUNT
NO MARK:REC/PB MODE
R :REC MODE
P :PB MODE
IC2201 BACK-UP/RESET
IC2200 3.6V REG
IC2203 LANC IN/OUT
IC2204 HI CONTROL
Q2201 MELODY SWITCH
Q2202 INVERTER
Q2211 LANC ON SWITCH
Q2205 BATTERY CHARGE DETECT
Q2219 LED DRIVE
Q2220 POWER LED ON
TO CONTROL SWITCH BLOCK (FK-4780) (SEE PAGE 4-69)
CONTROL SWITCH BLOCK(ME-4780)
PR-31 BOARD
CONTROL SWITCH BLOCK is replaced as a block so that these PRINTED WIRING BOARD are omitted.
14
15

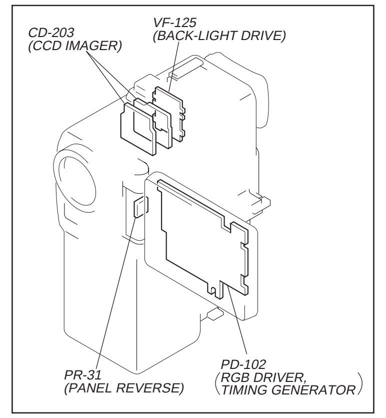
Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Note:
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

PR-31 (PANEL SW) PRINTED WIRING BOARD

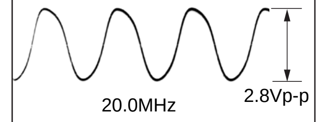
PR-31 BOARD(SIDE A)


(PANEL REVERSE)
1
2
3
4
11
1-670-875-

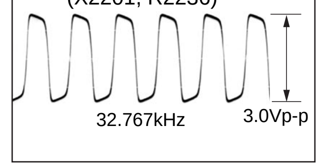

CD-203 (CCD IMAGER)
VF-125 (BACK-LIGHT DRIVE)
PR-31 (PANEL REVERSE)
PD-102 (RGB DRIVER, TIMING GENERATOR)

VC-210 BOARD (4/8)
CAMERA REC/PB

⑭ IC2204 ㊵ (X2200)

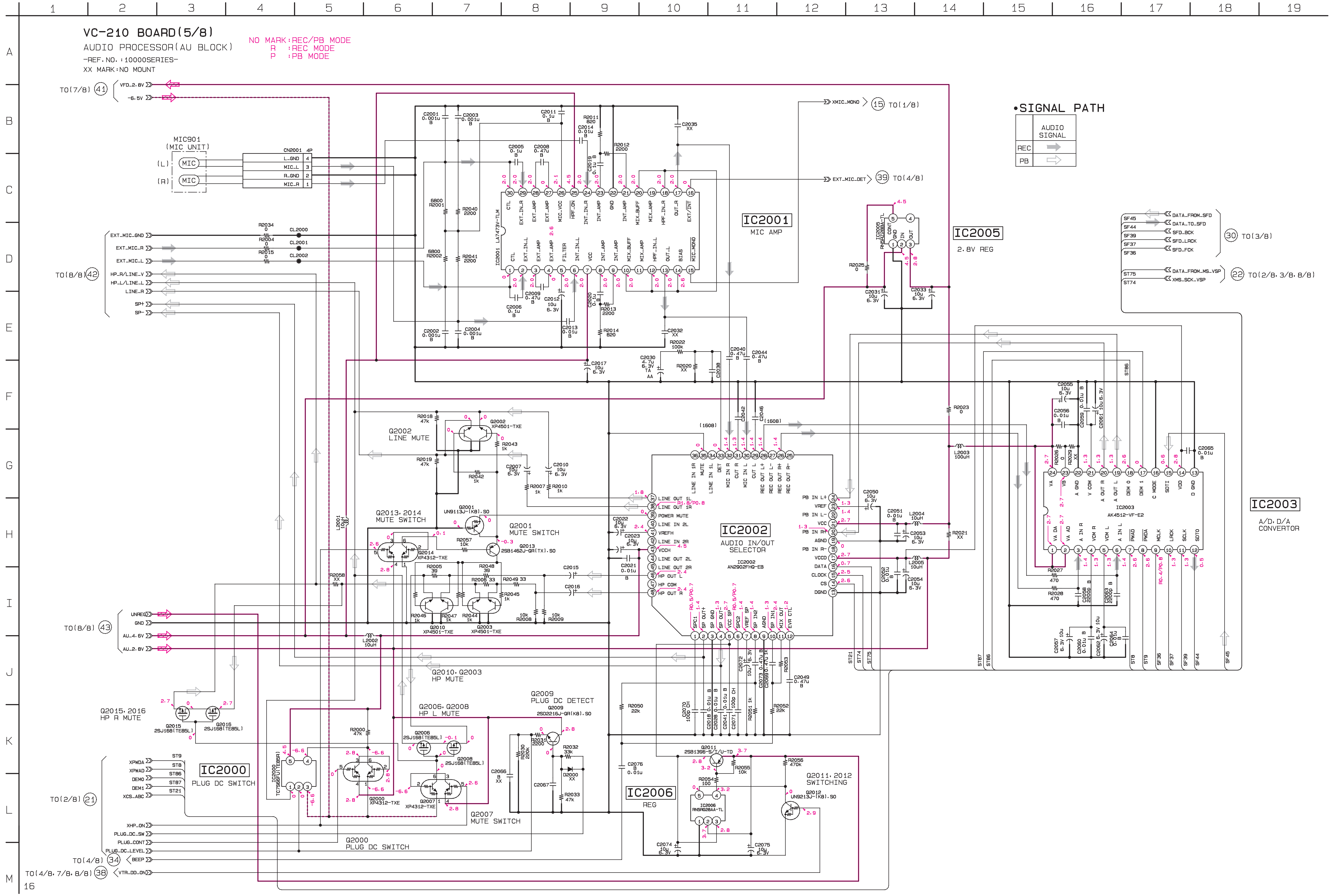


⑮ IC2204 ㊿
(X2201, R2236)

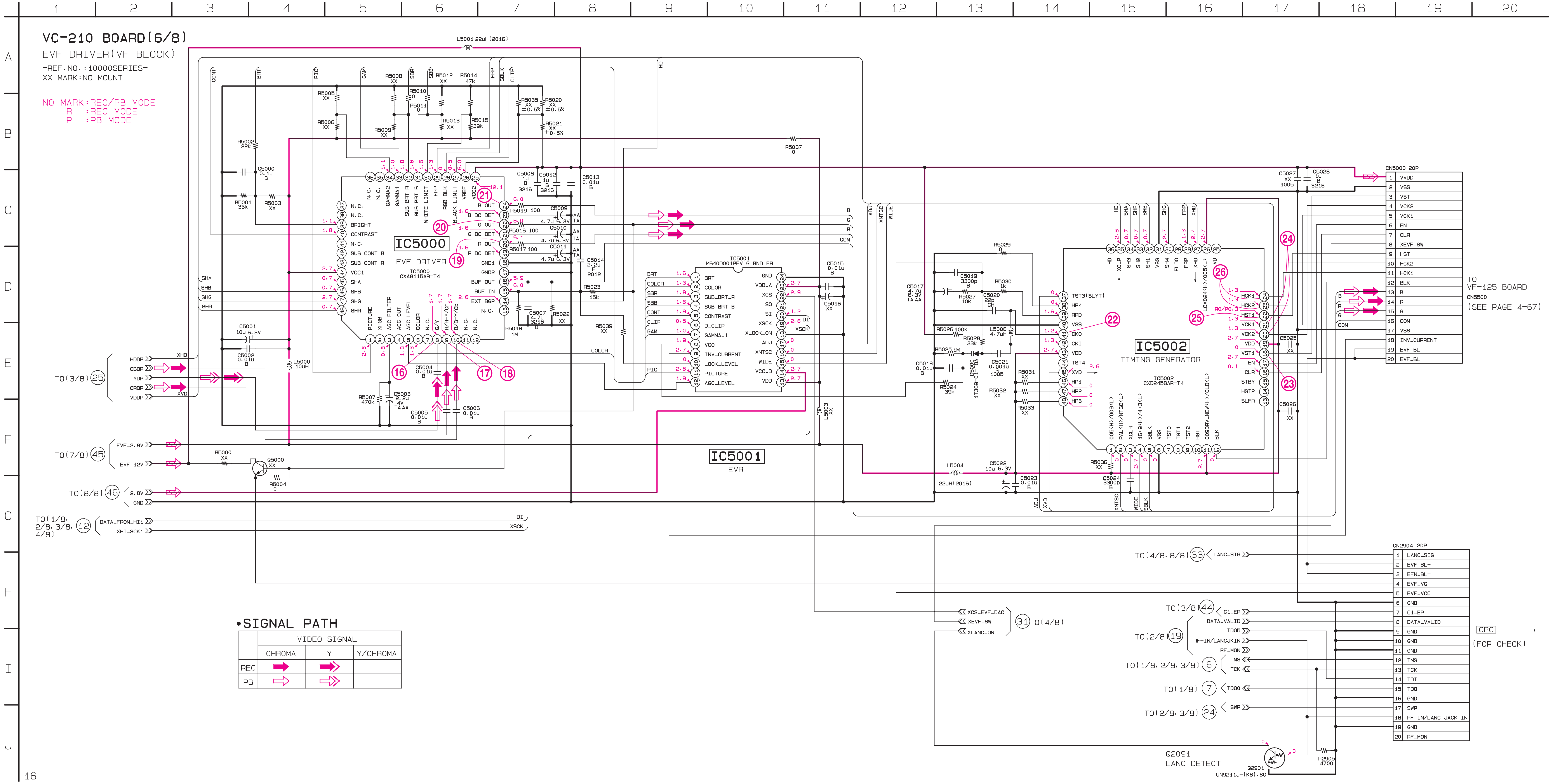


For schematic diagram

- Refer to page 4-14 for printed wiring board.


VC-210 BOARD(5/8)
AUDIO PROCESSOR(AU BLOCK)
-REF.NO.:10000SERIES-
XX MARK:NO MOUNT
NO MARK:REC/PB MODE
R :REC MODE
P :PB MODE
•SIGNAL PATH
AUDIO SIGNAL
REC
PB
TO(7/8) 41
VFD_2.8V
-6.5V
MIC901 (MIC UNIT)
(L) MIC
(R) MIC
CN2001 4P
TO(8/8) 42
EXT_MIC_GND
EXT_MIC_R
EXT_MIC_L
HP_R/LINE_V
HP_L/LINE_L
LINE_R
SP+
SP-
XMIC_MONO 15 TO(1/8)
EXT_MIC_DET 35 TO(4/8)
IC2001
MIC AMP
IC2005
2.8V REG
SF45 DATA_FROM_SFD
SF44 DATA_TO_SFD
SF39 SFD_BCK
SF37 SFD_LRCK
SF36 SFD_FCK
30 TO(3/8)
ST75 DATA_FROM_MS_VSP
ST74 XMS_SCK_VSP
22 TO(2/8, 3/8, 8/8)
Q2002
LINE MUTE
Q2013, 2014
MUTE SWITCH
Q2001
MUTE SWITCH
IC2002
AUDIO IN/OUT SELECTOR
IC2003
A/D, D/A CONVERTOR
TO(8/8) 43
UNREG
GND
AU_4.6V
AU_2.8V
Q2010, Q2003
HP MUTE
Q2009
PLUG DC DETECT
Q2006, Q2008
HP L MUTE
Q2015, 2016
HP R MUTE
Q2015 2SJ168(TE85L)
Q2016 2SJ168(TE85L)
IC2000
PLUG DC SWITCH
IC2006
REG
Q2011, 2012
SWITCHING
Q2007
MUTE SWITCH
Q2000
PLUG DC SWITCH
TO(2/8) 21
XPWDA
XPWAD
DEM0
DEM1
XCS_ABC
ST9
ST8
ST86
ST87
ST21
XHP_ON
PLUG_DC_SW
PLUG_CONT
PLUG_DC_LEVEL
TO(4/8) 34
BEEP
TO(4/8, 7/8, 8/8) 38
VTR_DD_ON
16

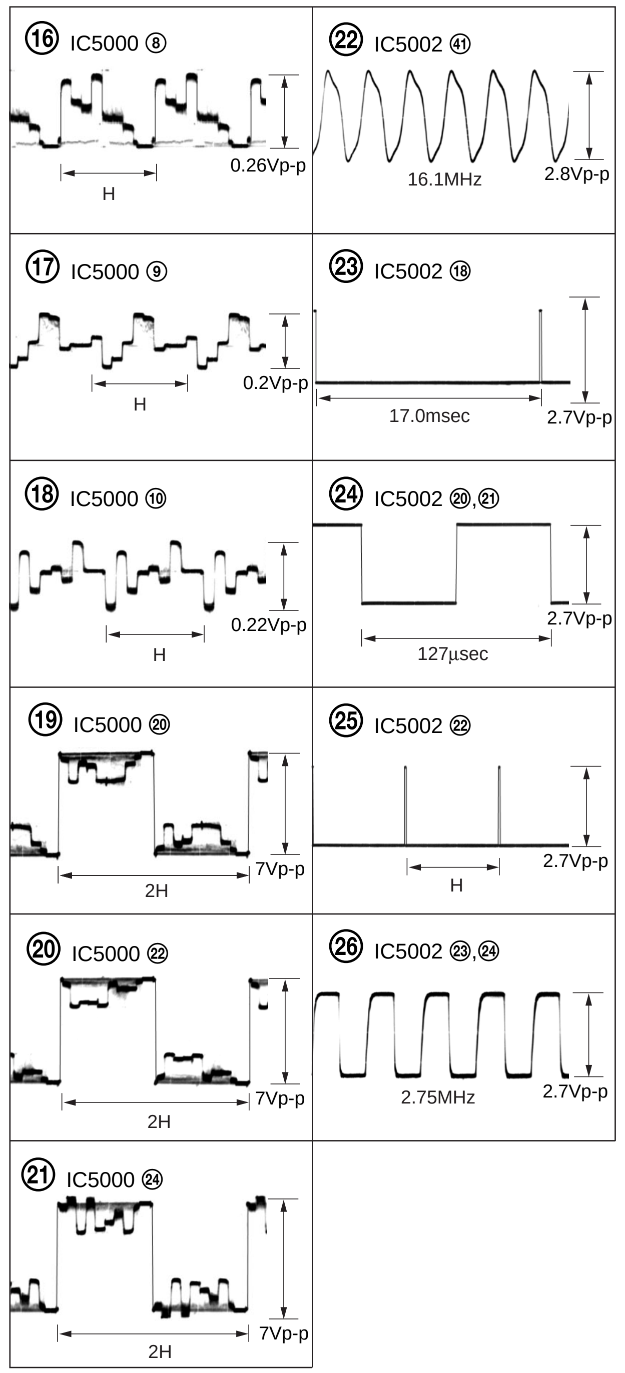
For schematic diagram
- Refer to page 4-14 for printed wiring board.


VC-210 BOARD(6/8)
EVF DRIVER(VF BLOCK)
-REF.NO.:10000SERIES-
XX MARK:NO MOUNT
NO MARK:REC/PB MODE
R :REC MODE
P :PB MODE
IC5000
EVF DRIVER
IC5000 CXA8115AR-T4
IC5001
EVR
IC5001 MB40D001PFV-G-BND-ER
IC5002
TIMING GENERATOR
IC5002 CXD2458AR-T4
CN5500 20P
TO VF-125 BOARD CN5500 (SEE PAGE 4-67)
CN2904 20P
CPC (FOR CHECK)
Q5000
Q2091 LANC DETECT
Q2091 UN9211J-(K8).SO
L5001 22uH(2016)
L5004 22uH(2016)
TO(3/8) 25
TO(7/8) 45
TO(8/8) 46
TO(1/8, 2/8, 3/8, 4/8) 12
TO(4/8, 8/8) 33
TO(3/8) 44
TO(2/8) 19
TO(1/8, 2/8, 3/8) 6
TO(1/8) 7
TO(2/8, 3/8) 24
31 TO(4/8)
HDDP CBDP YDP CRDP VDDP
EVF_2.8V EVF_12V
2.8V GND
DATA_FROM_HI1 XHI_SCK1
LANC_SIG
XCS_EVF_DAC XEVF_SW XLANC_ON
C1_EP DATA_VALID TDO5 RF-IN/LANCJKIN RF_MON TMS TCK TDO0 SWP
1 VVDD 2 VSS 3 VST 4 VCK2 5 VCK1 6 EN 7 CLR 8 XEVF_SW 9 HST 10 HCK2 11 HCK1 12 BLK 13 B 14 R 15 G 16 COM 17 VSS 18 INV_CURRENT 19 EVF_BL 20 EVF_BL
1 LANC_SIG 2 EVF_BL+ 3 EFN_BL- 4 EVF_VG 5 EVF_VCO 6 GND 7 C1_EP 8 DATA_VALID 9 GND 10 GND 11 GND 12 TMS 13 TCK 14 TDO 15 TDO 16 GND 17 SWP 18 RF_IN/LANC_JACK_IN 19 GND 20 RF_MON
16

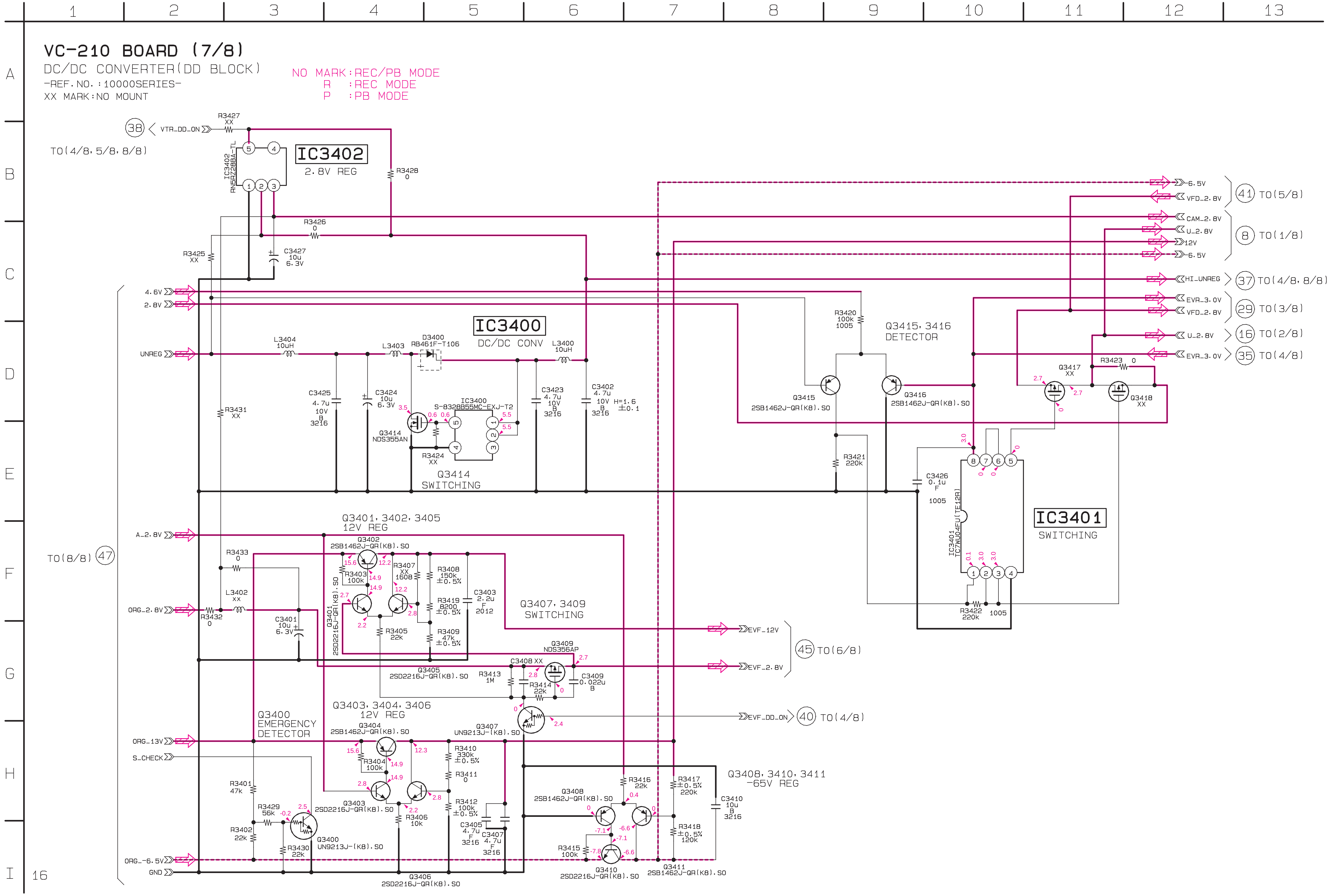
•SIGNAL PATH

	VIDEO SIGNAL		
	CHROMA	Y	Y/CHROMA
REC	➡	➡	
PB	⇨	⇨	

VC-210 BOARD (6/8)
CAMERA REC/PB

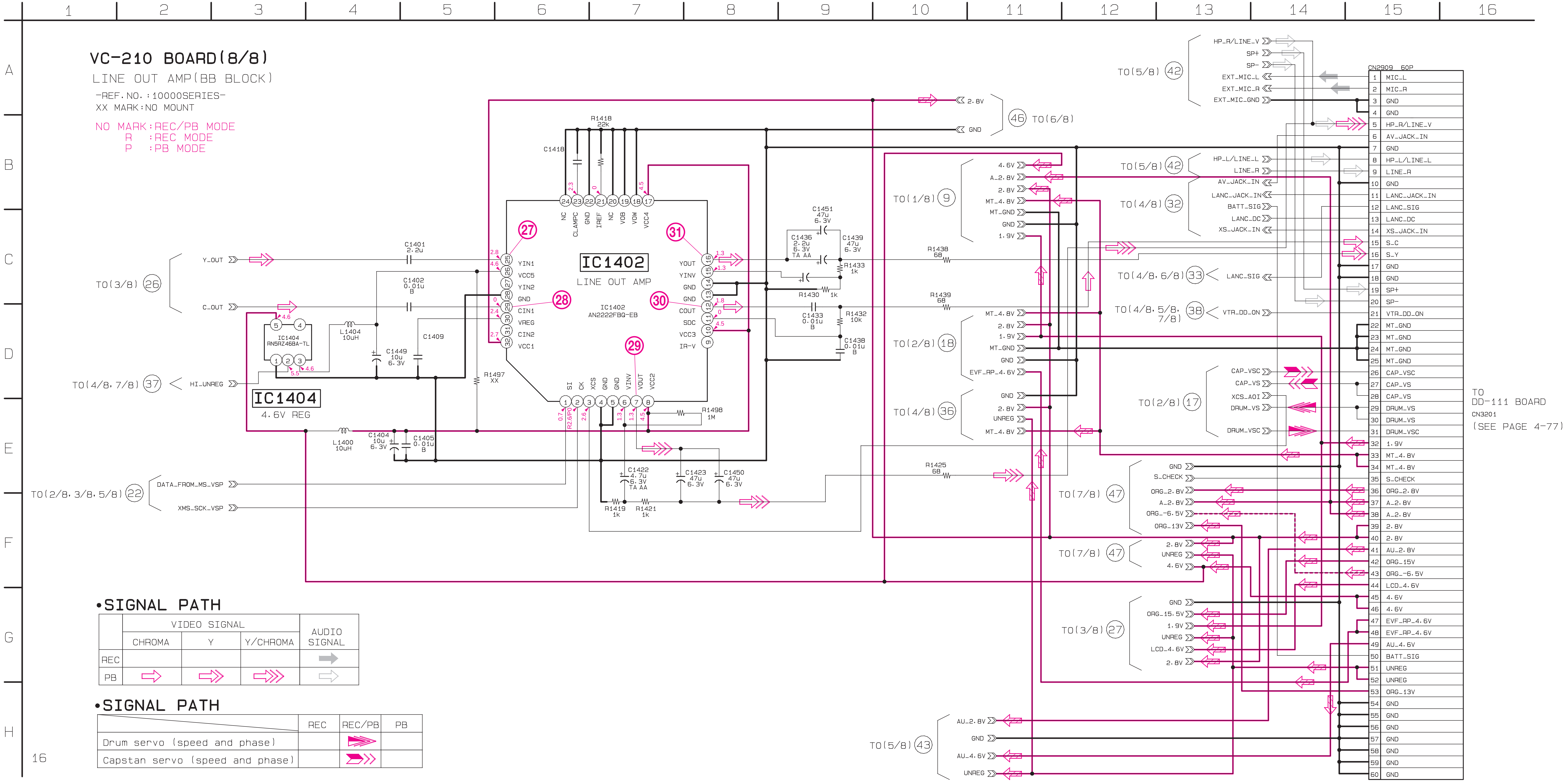


For schematic diagram
- Refer to page 4-14 for printed wiring board.


1
2
3
4
5
6
7
8
9
10
11
12
13
A
B
C
D
E
F
G
H
I
VC-210 BOARD (7/8)
DC/DC CONVERTER(DD BLOCK)
-REF.NO.:10000SERIES-
XX MARK:NO MOUNT
NO MARK:REC/PB MODE
R :REC MODE
P :PB MODE
38
VTR_DD_ON
TO(4/8,5/8,8/8)
R3427 XX
IC3402
2.8V REG
IC3402 RN5RZ28BA-TL
R3428 0
R3426 0
R3425 XX
C3427 10u 6.3V
4.6V
2.8V
UNREG
L3404 10uH
L3403
D3400 RB461F-T106
IC3400
DC/DC CONV
L3400 10uH
C3425 4.7u 10V B 3216
C3424 10u 6.3V
IC3400 S-8328B55MC-EXJ-T2
C3423 4.7u 10V B 3216
C3402 4.7u 10V H=1.6 B ±0.1 3216
R3431 XX
Q3414 NDS355AN
R3424 XX
Q3414 SWITCHING
A_2.8V
R3433 0
L3402 XX
ORG_2.8V
R3432 0
C3401 10u 6.3V
Q3401,3402,3405
12V REG
Q3402 2SB1462J-QR(K8).SO
R3403 100k
R3407 XX 1608
R3408 150k ±0.5%
R3419 8200 ±0.5%
C3403 2.2u F 2012
R3405 22k
R3409 47k ±0.5%
Q3401 2SD2216J-QR(K8).SO
Q3407,3409
SWITCHING
Q3409 NDS356AP
C3408 XX
R3413 1M
R3414 22k
C3409 0.022u B
Q3405 2SD2216J-QR(K8).SO
EVF_12V
EVF_2.8V
45
TO(6/8)
EVF_DD_ON
40
TO(4/8)
47
TO(8/8)
Q3400
EMERGENCY
DETECTOR
Q3403,3404,3406
12V REG
Q3404 2SB1462J-QR(K8).SO
Q3407 UN9213J-(K8).SO
ORG_13V
S_CHECK
R3404 100k
R3410 330k ±0.5%
R3411 0
R3401 47k
R3429 56k
R3402 22k
R3430 22k
Q3400 UN9213J-(K8).SO
Q3403 2SD2216J-QR(K8).SO
R3406 10k
R3412 100k ±0.5%
C3405 4.7u F 3216
C3407 4.7u F 3216
ORG_-6.5V
GND
Q3406 2SD2216J-QR(K8).SO
Q3408 2SB1462J-QR(K8).SO
R3416 22k
R3417 ±0.5% 220k
R3418 ±0.5% 120k
R3415 100k
Q3410 2SD2216J-QR(K8).SO
Q3411 2SB1462J-QR(K8).SO
C3410 10u B 3216
Q3408,3410,3411
-65V REG
16
-6.5V
VFD_2.8V
41
TO(5/8)
CAM_2.8V
U_2.8V
12V
-6.5V
8
TO(1/8)
HI_UNREG
37
TO(4/8,8/8)
EVR_3.0V
VFD_2.8V
29
TO(3/8)
U_2.8V
16
TO(2/8)
EVR_3.0V
35
TO(4/8)
R3420 100k 1005
Q3415,3416
DETECTOR
Q3415 2SB1462J-QR(K8).SO
Q3416 2SB1462J-QR(K8).SO
R3423 0
Q3417 XX
Q3418 XX
R3421 220k
C3426 0.1u F 1005
IC3401
SWITCHING
IC3401 TC7WU04FU(TE12R)
R3422 220k
1005

DC/DC CONVERTER
VC-210 (7/8)

For schematic diagram
- Refer to page 4-14 for printed wiring board.


1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
A B C D E F G H
VC-210 BOARD(8/8)
LINE OUT AMP(BB BLOCK)
-REF.NO.:10000SERIES-
XX MARK:NO MOUNT
NO MARK:REC/PB MODE
R :REC MODE
P :PB MODE
IC1402
LINE OUT AMP
IC1402
AN2222FBQ-EB
IC1404
4.6V REG
IC1404
RN5RZ46BA-TL
YIN1 VCC5 YIN2 GND CIN1 VREG CIN2 VCC1
YOUT YINV GND GND COUT SDC VCC3 IR-V
NC CLAMPC GND IREF NC VOB VOW VCC4
SI CK XCS GND GND VINV VOUT VCC2
R1418 22k
C1418
C1401 2.2u
C1402 0.01u B
L1404 10uH
C1409
C1449 10u 6.3V
R1497 XX
L1400 10uH
C1404 10u 6.3V
C1405 0.01u B
C1422 4.7u 6.3V TA AA
C1423 47u 6.3V
C1450 47u 6.3V
R1419 1k
R1421 1k
R1498 1M
C1451 47u 6.3V
C1436 2.2u 6.3V TA AA
C1439 47u 6.3V
R1433 1k
R1430 1k
C1433 0.01u B
R1432 10k
C1438 0.01u B
R1438 68
R1439 68
R1425 68
TO(3/8) ㉖ Y_OUT C_OUT
TO(4/8,7/8) ㊲ HI_UNREG
TO(2/8,3/8,5/8) ㉒ DATA_FROM_MS_VSP XMS_SCK_VSP
TO(6/8) ㊻ 2.8V GND
TO(1/8) ⑨ 4.6V A_2.8V 2.8V MT_4.8V MT_GND GND 1.9V
TO(2/8) ⑱ MT_4.8V 2.8V 1.9V MT_GND GND EVF_RP_4.6V
TO(4/8) ㊱ GND 2.8V UNREG MT_4.8V
TO(5/8) ㊷ HP_R/LINE_V SP+ SP- EXT_MIC_L EXT_MIC_R EXT_MIC_GND
TO(5/8) ㊷ HP_L/LINE_L LINE_R
TO(4/8) ㉜ AV_JACK_IN LANC_JACK_IN BATT_SIG LANC_DC XS_JACK_IN
TO(4/8,6/8) ㉝ LANC_SIG
TO(4/8,5/8,7/8) ㊳ VTR_DD_ON
TO(2/8) ⑰ CAP_VSC CAP_VS XCS_AOI DRUM_VS DRUM_VSC
TO(7/8) ㊼ GND S_CHECK ORG_2.8V A_2.8V ORG_-6.5V ORG_13V
TO(7/8) ㊼ 2.8V UNREG 4.6V
TO(3/8) ㉗ GND ORG_15.5V 1.9V UNREG LCD_4.6V 2.8V
TO(5/8) ㊸ AU_2.8V GND AU_4.6V UNREG
CN2909 60P
1 MIC_L
2 MIC_R
3 GND
4 GND
5 HP_R/LINE_V
6 AV_JACK_IN
7 GND
8 HP_L/LINE_L
9 LINE_R
10 GND
11 LANC_JACK_IN
12 LANC_SIG
13 LANC_DC
14 XS_JACK_IN
15 S_C
16 S_Y
17 GND
18 GND
19 SP+
20 SP-
21 VTR_DD_ON
22 MT_GND
23 MT_GND
24 MT_GND
25 MT_GND
26 CAP_VSC
27 CAP_VS
28 CAP_VS
29 DRUM_VS
30 DRUM_VS
31 DRUM_VSC
32 1.9V
33 MT_4.8V
34 MT_4.8V
35 S_CHECK
36 ORG_2.8V
37 A_2.8V
38 A_2.8V
39 2.8V
40 2.8V
41 AU_2.8V
42 ORG_15V
43 ORG_-6.5V
44 LCD_4.6V
45 4.6V
46 4.6V
47 EVF_RP_4.6V
48 EVF_RP_4.6V
49 AU_4.6V
50 BATT_SIG
51 UNREG
52 UNREG
53 ORG_13V
54 GND
55 GND
56 GND
57 GND
58 GND
59 GND
60 GND
TO DD-111 BOARD CN3201 (SEE PAGE 4-77)
16

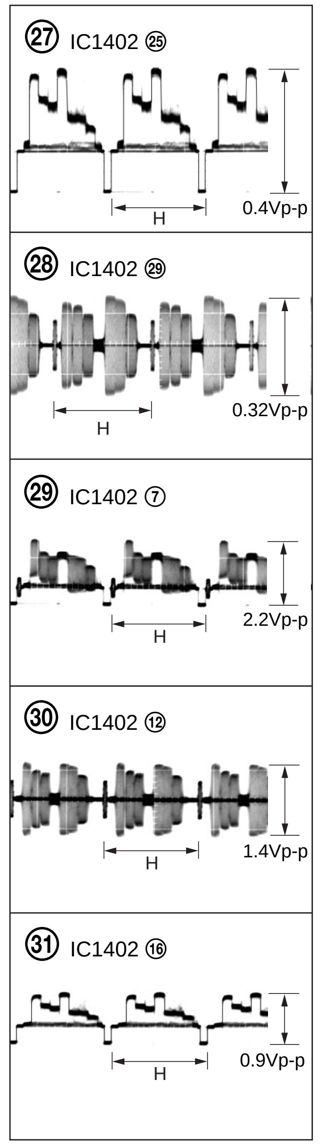
• SIGNAL PATH

	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
REC				
PB	⇒	⇒⇒	⇒⇒⇒	⇒

• SIGNAL PATH

	REC	REC/PB	PB
Drum servo (speed and phase)		⇒	
Capstan servo (speed and phase)		⇒⇒	

VC-210 BOARD (8/8)
CAMERA REC/PB



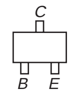
MR-40 BOARD

C1804	D-8
C1805	B-8
C1806	C-7
C1807	C-7
C1809	C-7
C1833	C-8
C1834	C-7
C1837	C-7
C1840	C-8
C1844	C-8
C1845	D-8
C1846	C-7
C1850	C-7
C1852	D-7
C1854	D-7
C1856	D-8
C1860	E-8
C1866	D-8
C1869	E-8
C1875	E-7
C1878	D-8
C1881	D-8
C1883	C-7
C1884	D-7
C1885	D-8
C1886	D-8
C1887	E-8
C1888	D-8
C1889	D-8
C1890	C-8
C1901	B-8
C1903	A-8
C1904	C-7
C1909	A-7
C1910	A-7
C1914	B-7
C1915	E-8
C1933	A-8
C2500	B-1
C2501	F-2
C2507	B-1
C2546	B-2
C2550	C-2
C2551	B-2
C2552	B-2
C2553	C-1
C2554	D-2
C2555	C-1
C2556	C-1
C2557	C-1
C2558	C-1
C2559	C-1
C2561	B-1
C2562	C-1
C2563	C-1
C2564	D-1
C2565	B-1
C2566	B-2
C2567	E-2
C2569	D-2
C2570	B-1
C2572	A-2
C2573	A-8
C2574	A-1
C2575	A-1
C2576	D-2
C2577	D-2
C2579	D-2
C2582	A-2
C2583	A-8
C2585	A-1
C2586	A-1
C2587	A-1
C2588	A-1
C2589	A-1
C2590	B-2
C2591	B-2
CN1810	E-2
CN2501	A-1
CN2502	B-2
CN2503	C-2
CN2504	F-7
CN2505	A-2
CN2506	E-5
CN2507	A-7
D2500	B-7
D2501	F-1
D2502	E-2
IC1814	C-8
IC1900	B-8
IC2500	F-2
IC2503	C-1
IC2504	B-1
IC2505	D-1
L1803	E-8
L1804	D-8
L1805	B-8
L1808	E-8
L1811	E-7
L2511	B-1
L2512	A-8
L2513	C-7
Q1801	C-7
Q2505	B-7
Q2506	B-7
Q2507	B-7
Q2508	D-1
Q2509	D-1
R1826	C-7
R1827	B-8
R1828	D-7
R1829	C-7
R1831	C-7
R1833	C-7
R1834	D-8
R1835	D-8
R1836	D-8
R1837	D-8
R1838	D-7
R1839	D-8
R1840	D-7
R1843	E-7
R1848	D-7
R1852	D-8
R1855	D-7
R1857	E-7
R1859	E-7
R1869	D-8
R1870	D-8
R1871	D-8
R1872	C-8
R1874	D-7
R1909	A-8
R1938	A-8
R1939	C-7
R1940	B-7
R1941	B-7
R1942	A-8
R1943	A-8
R1944	A-8
R1945	B-8
R1946	A-7
R1947	D-8
R1949	B-8
R1950	B-8
R1951	B-8
R1952	B-8
R2500	F-2
R2501	F-1
R2502	C-2
R2505	B-2
R2506	B-1
R2507	B-2
R2508	B-2
R2509	C-1
R2510	C-1
R2511	B-1
R2517	B-1
R2530	B-2
R2531	A-8
R2532	A-8
R2533	A-8
R2534	A-1
R2546	C-2
R2547	C-2
R2549	B-2
R2550	C-2
R2551	C-2
R2552	D-1
R2553	C-1
R2554	C-1
R2556	B-1
R2557	B-1
R2558	C-1
R2559	B-1
R2560	B-1
R2564	E-1
R2565	D-1
R2566	C-1
R2567	C-1
R2568	D-1
R2569	A-2
R2570	A-2
R2571	B-1
R2572	B-2
R2573	B-7
R2574	D-2
R2575	D-2
R2576	D-2
R2577	D-2
R2578	B-7
R2579	A-2
R2580	E-2
R2581	E-2
R2582	C-7
R2583	C-7
R2585	A-2
R2586	A-2
R2587	A-1
R2588	C-1
R2599	A-8
R2600	D-2
R2601	D-1
R2602	D-2
R2603	D-2
R2604	C-1
R2605	D-2

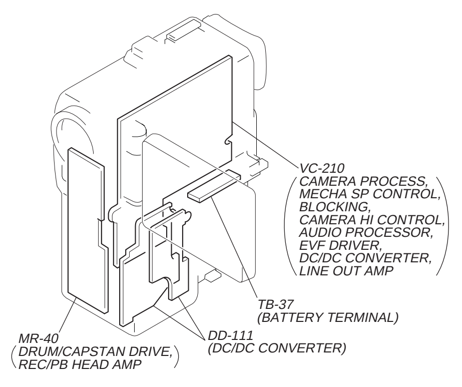
For printed wiring boards

- This board is six-layer print board. However, the patterns of layers two to five have not been included in the diagram.
- Chip parts

Transistor

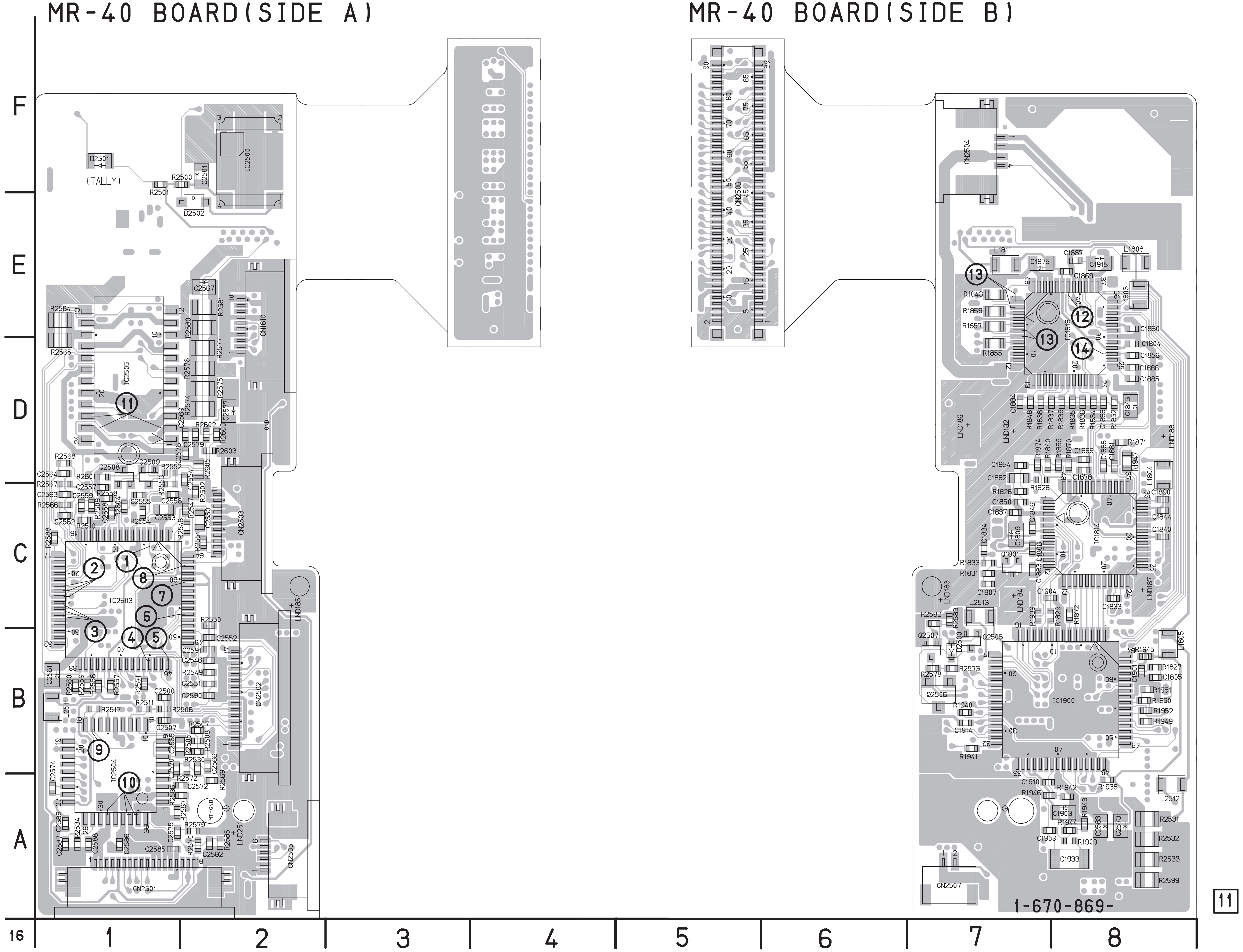


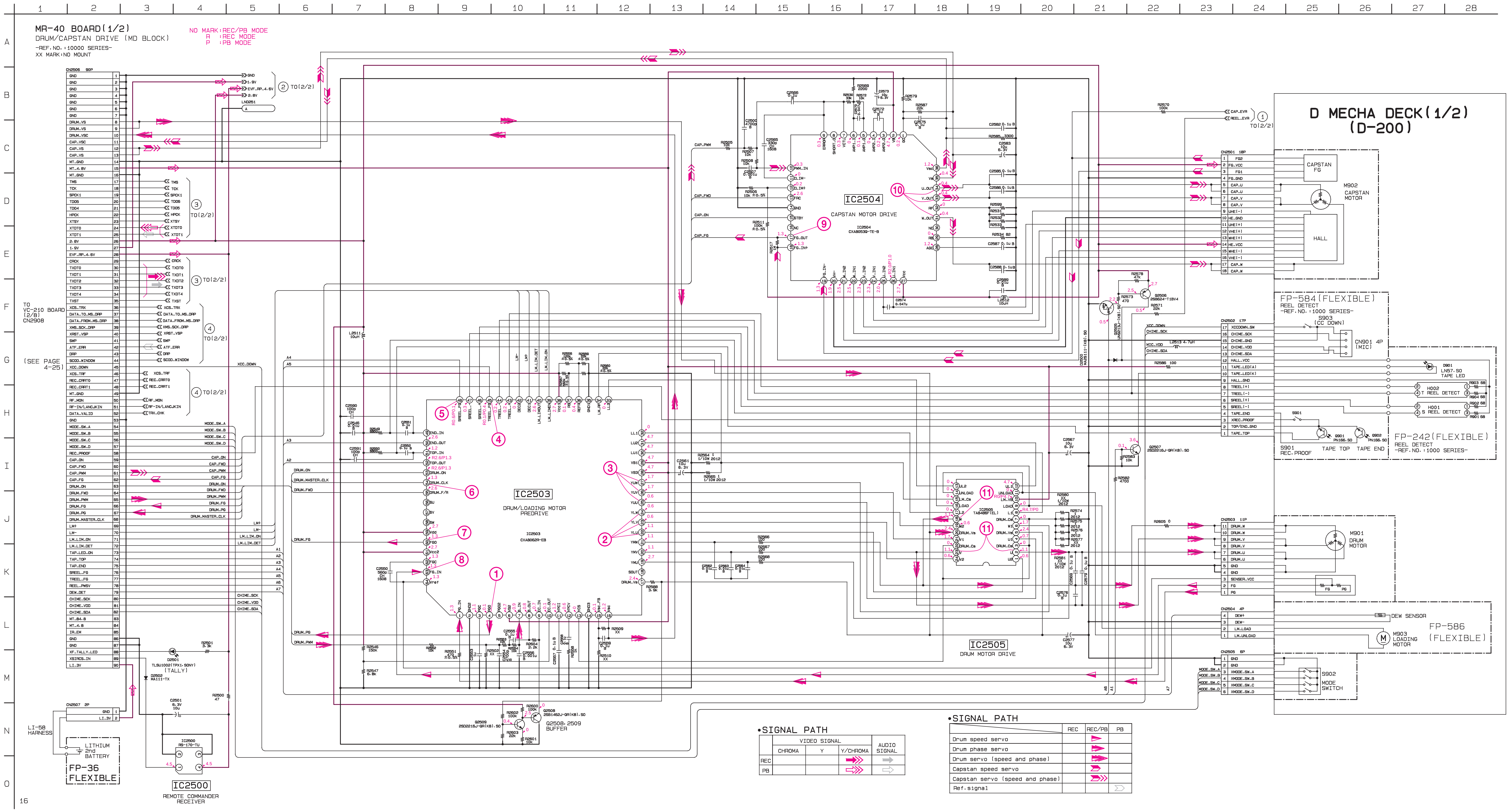
There are few cases that the part printed on this diagram isn't mounted in this model.


VC-210
CAMERA PROCESS,
MECHA SP CONTROL,
BLOCKING,
CAMERA HI CONTROL,
AUDIO PROCESSOR,
EVF DRIVER,
DC/DC CONVERTER,
LINE OUT AMP
TB-37
(BATTERY TERMINAL)
MR-40
(DRUM/CAPSTAN DRIVE,
REC/PB HEAD AMP
DD-111
(DC/DC CONVERTER)

MR-40 (DRUM/CAPSTAN DRIVE, REC/PB HEAD AMP) PRINTED WIRING BOARD

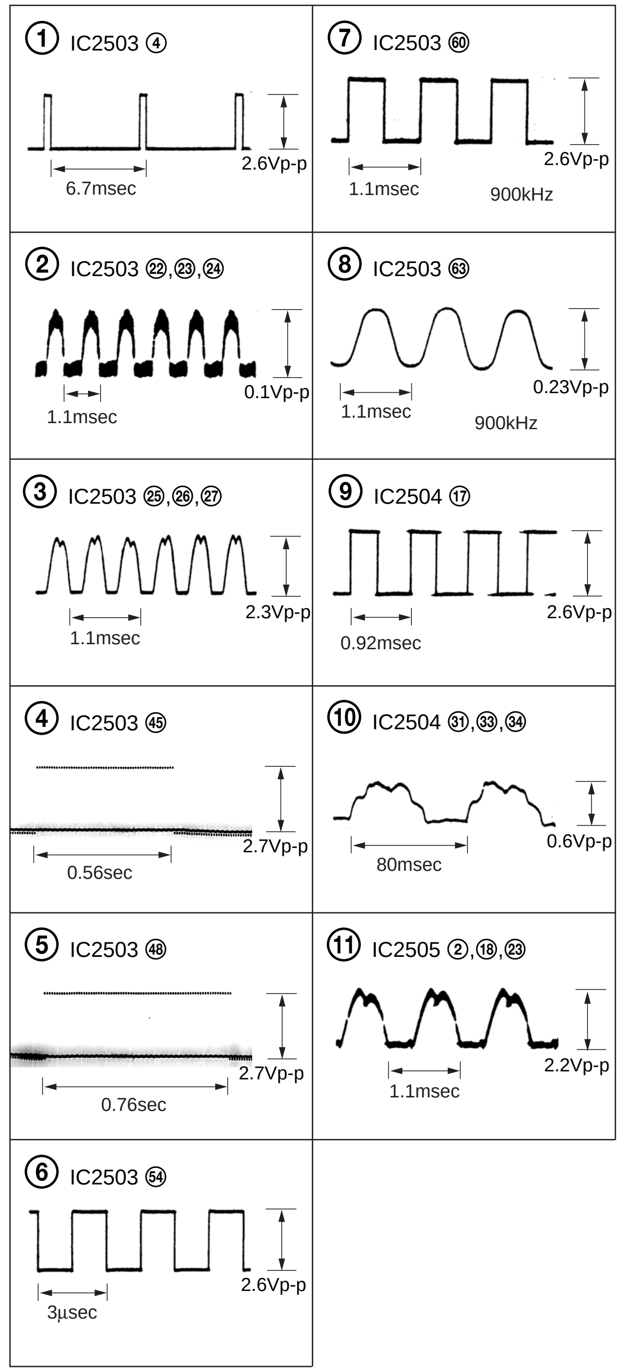
— Ref. No. MR-40 Board; 10,000 Series —


MR-40 BOARD(SIDE A)
MR-40 BOARD(SIDE B)
F
E
D
C
B
A
16
1
2
3
4
5
6
7
8
(TALLY)
D2501
IC2500
IC2505
IC2503
IC2504
IC1814
IC1900
IC1816
CN1810
CN2501
CN2502
CN2503
CN2504
CN2505
CN2506
CN2507
1-670-869-
11


MR-40 BOARD(1/2)
DRUM/CAPSTAN DRIVE (MD BLOCK)
-REF.NO.:10000 SERIES-
XX MARK:NO MOUNT
NO MARK:REC/PB MODE
R :REC MODE
P :PB MODE
TO VC-210 BOARD (2/8) CN2908
(SEE PAGE 4-25)
IC2503 DRUM/LOADING MOTOR PREDRIVE
IC2504 CAPSTAN MOTOR DRIVE
IC2505 DRUM MOTOR DRIVE
IC2500 REMOTE COMMANDER RECEIVER
D MECHA DECK(1/2) (D-200)
M902 CAPSTAN MOTOR
M901 DRUM MOTOR
M903 LOADING MOTOR
FP-584(FLEXIBLE)
FP-242(FLEXIBLE)
FP-586 (FLEXIBLE)
FP-36 FLEXIBLE
LI-5B HARNESS
LITHIUM 2nd BATTERY
S902 MODE SWITCH
DEW SENSOR
Q2508,2509 BUFFER
•SIGNAL PATH
VIDEO SIGNAL
CHROMA
Y
Y/CHROMA
AUDIO SIGNAL
REC
PB
•SIGNAL PATH
REC
REC/PB
PB
Drum speed servo
Drum phase servo
Drum servo (speed and phase)
Capstan speed servo
Capstan servo (speed and phase)
Ref.signal

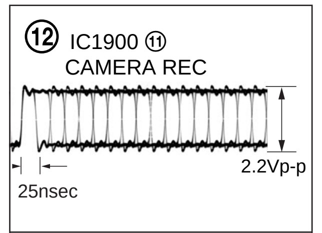
MR-40 BOARD (1/2)

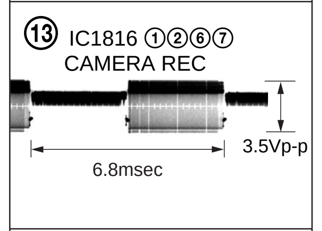
CAMERA REC/PB

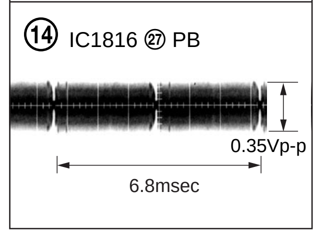


For schematic diagram
- Refer to page 4-49 for printed wiring board.

MR-40 BOARD (2/2)

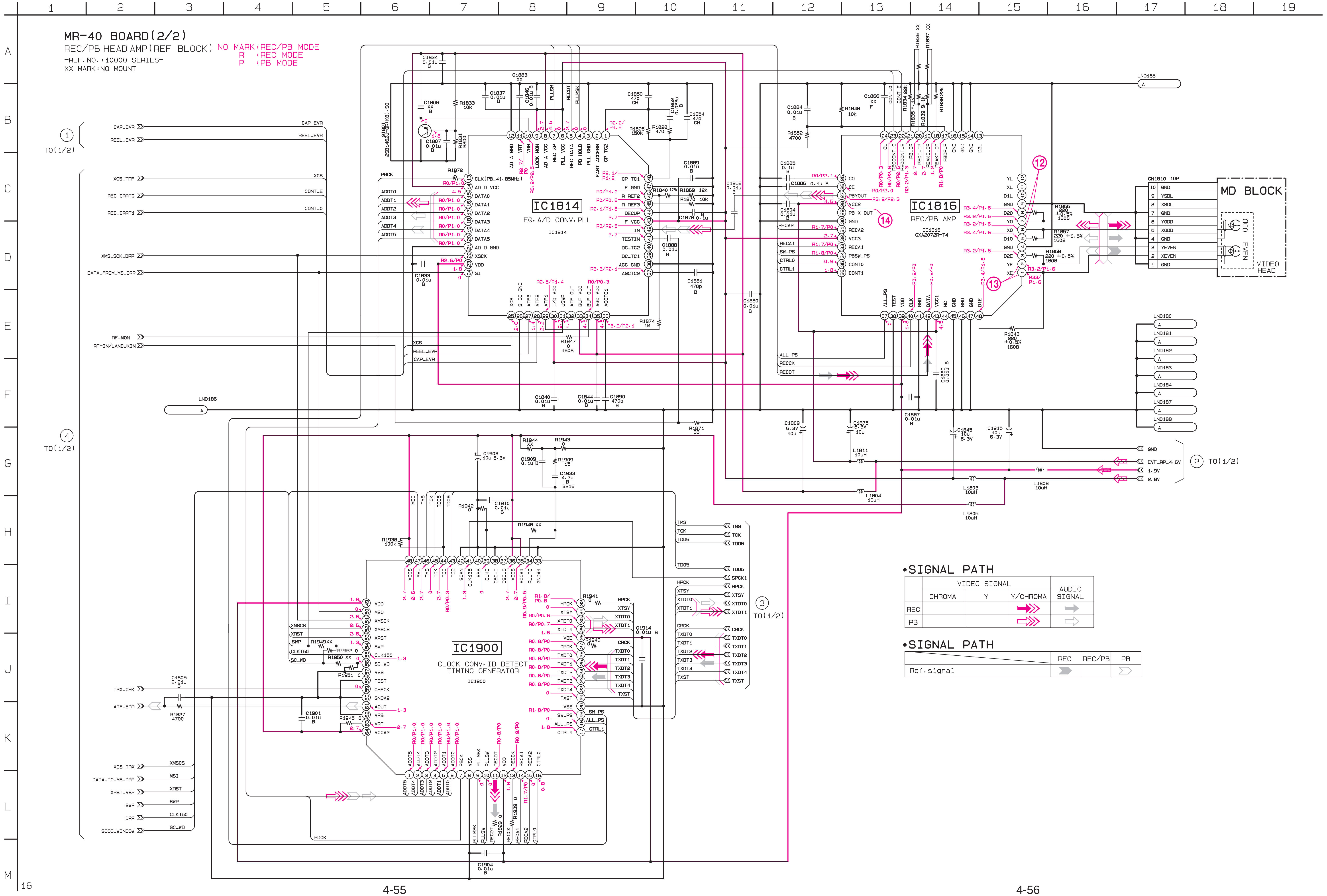

⑫ IC1900 ⑪
CAMERA REC


⑬ IC1816 ①②⑥⑦
CAMERA REC


⑭ IC1816 ㉗ PB

MR-40 BOARD(2/2)
REC/PB HEAD AMP(REF BLOCK)
-REF.NO.:10000 SERIES-
XX MARK:NO MOUNT

NO MARK:REC/PB MODE
R :REC MODE
P :PB MODE


1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
A
B
C
D
E
F
G
H
I
J
K
L
M
16
① TO(1/2)
CAP_EVR
REEL_EVR
XCS_TRF
REC_CRRT0
REC_CRRT1
XMS_SCK_DRP
DATA_FROM_MS_DRP
RF_MON
RF-IN/LANCJKIN
④ TO(1/2)
TRK_CHK
ATF_ERR
XCS_TRX
DATA_TO_MS_DRP
XRST_VSP
SWP
DRP
SCOO_WINDOW
LND186
IC1814
EQ. A/D CONV. PLL
IC1816
REC/PB AMP
CXA2072R-T4
IC1900
CLOCK CONV. ID DETECT
TIMING GENERATOR
MD BLOCK
CN1810 10P
VIDEO HEAD
ODD
EVEN
LND185
LND180
LND181
LND182
LND183
LND184
LND187
LND188
GND
EVF_RP_4.6V
1.9V
2.8V
② TO(1/2)
③ TO(1/2)
TMS
TCK
TDO6
TDO5
SPCK1
HPCK
XTSY
XTDT0
XTDT1
CRCK
TXDT0
TXDT1
TXDT2
TXDT3
TXDT4
TXST
L1803 10uH
L1804 10uH
L1805 10uH
L1808 10uH
L1811 10uH
⑫
⑬
⑭

•SIGNAL PATH

	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
REC			➡»»	➡
PB			⇨»»	⇨

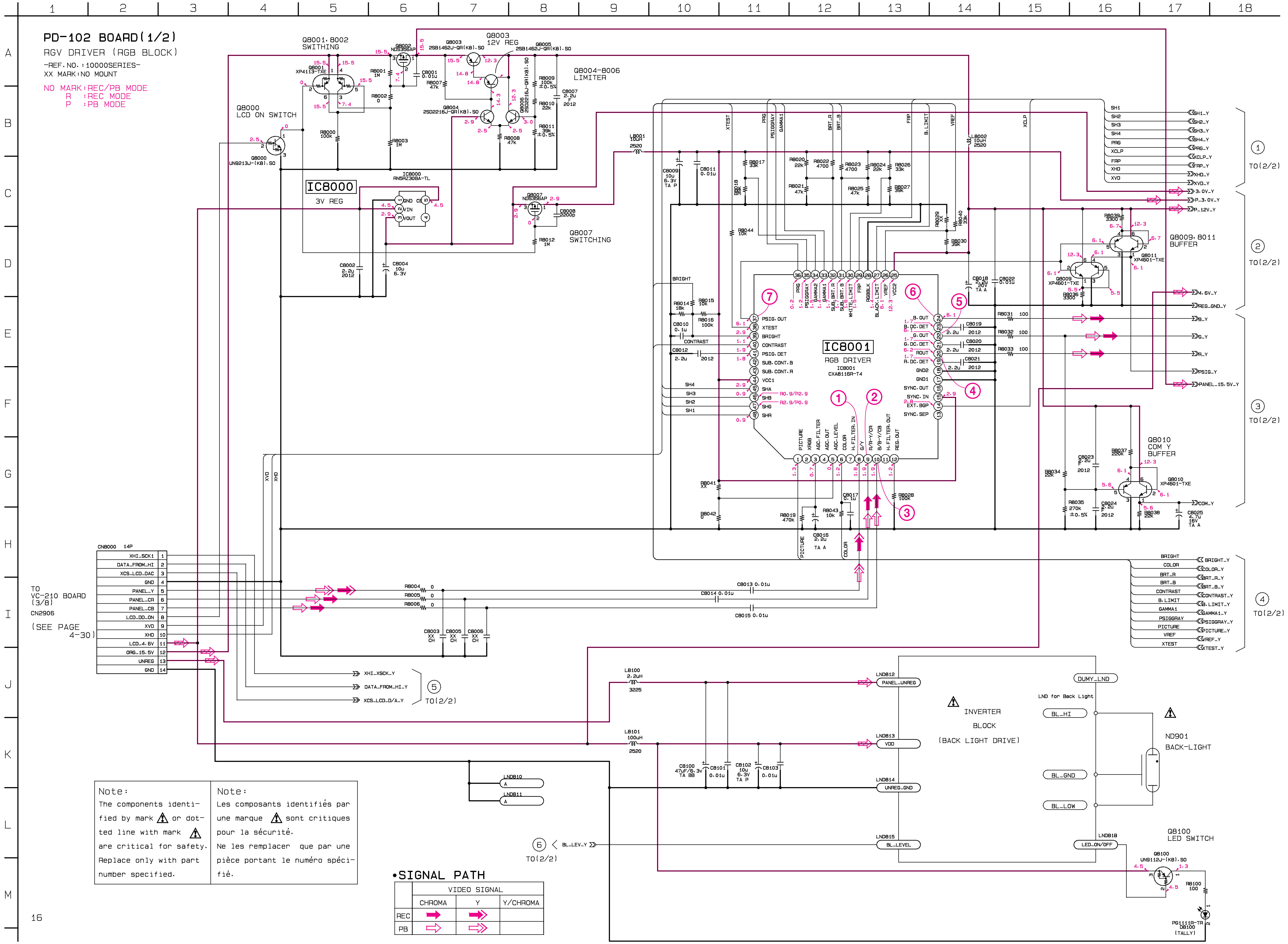
•SIGNAL PATH

	REC	REC/PB	PB
Ref.signal	➤		▷

REC/PB HEAD AMP
MR-40 (2/2)

For schematic diagram

- Refer to page 4-63 for printed wiring board.


PD-102 BOARD(1/2)
RGV DRIVER (RGB BLOCK)
-REF.NO.:10000SERIES-
XX MARK:NO MOUNT
NO MARK:REC/PB MODE
R :REC MODE
P :PB MODE
Q8000 LCD ON SWITCH
Q8001,8002 SWITHING
Q8003 12V REG
Q8004-8006 LIMITER
IC8000 3V REG
Q8007 SWITCHING
IC8001 RGB DRIVER CXA8116R-T4
Q8009,8011 BUFFER
Q8010 COM Y BUFFER
CN8000 14P
TO VC-210 BOARD (3/8) CN2906 (SEE PAGE 4-30)
INVERTER BLOCK (BACK LIGHT DRIVE)
ND901 BACK-LIGHT
Q8100 LED SWITCH
TO(2/2)

Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

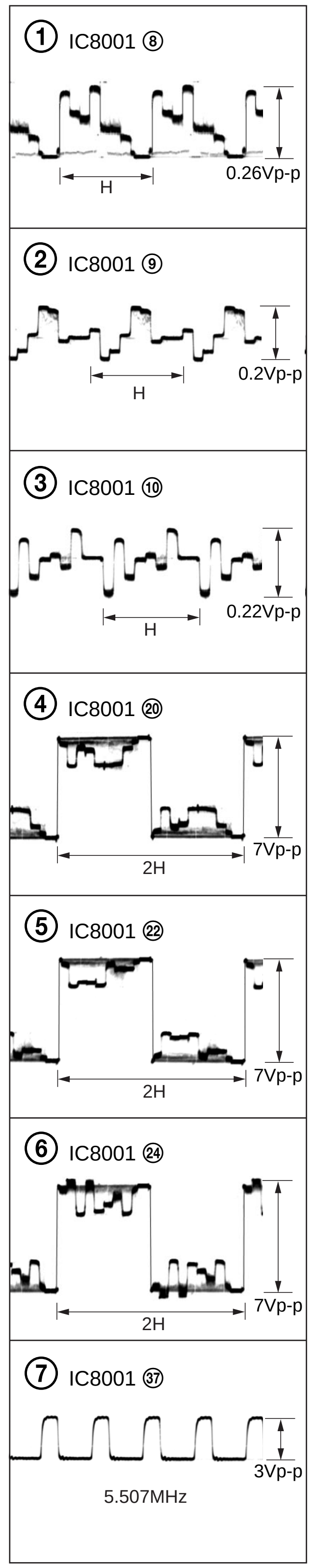
Note:
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

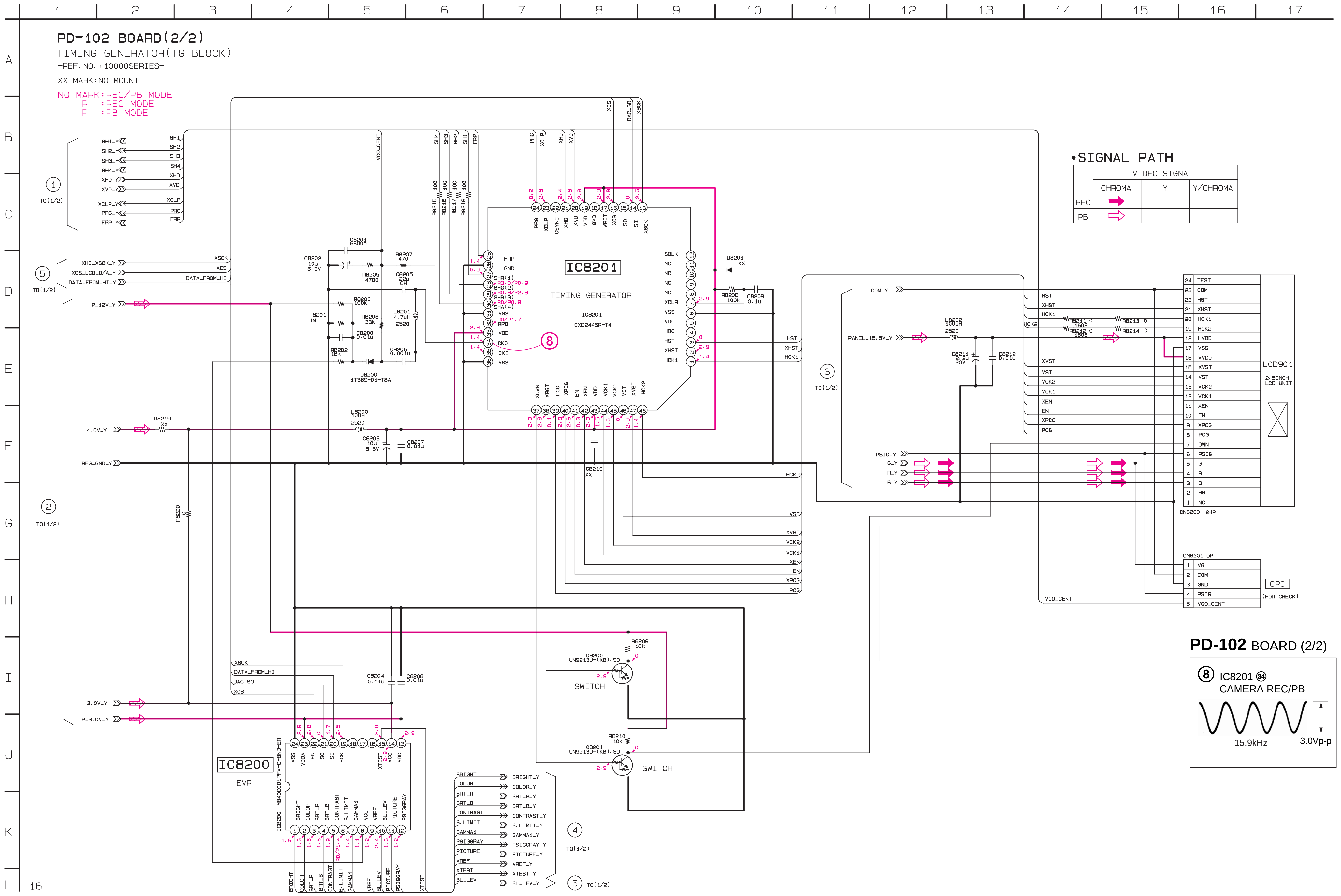
- SIGNAL PATH

	VIDEO SIGNAL		
	CHROMA	Y	Y/CHROMA
REC	➡	➡»	
PB	⇨	⇨»	

PD-102 BOARD (1/2)

CAMERA REC/PB

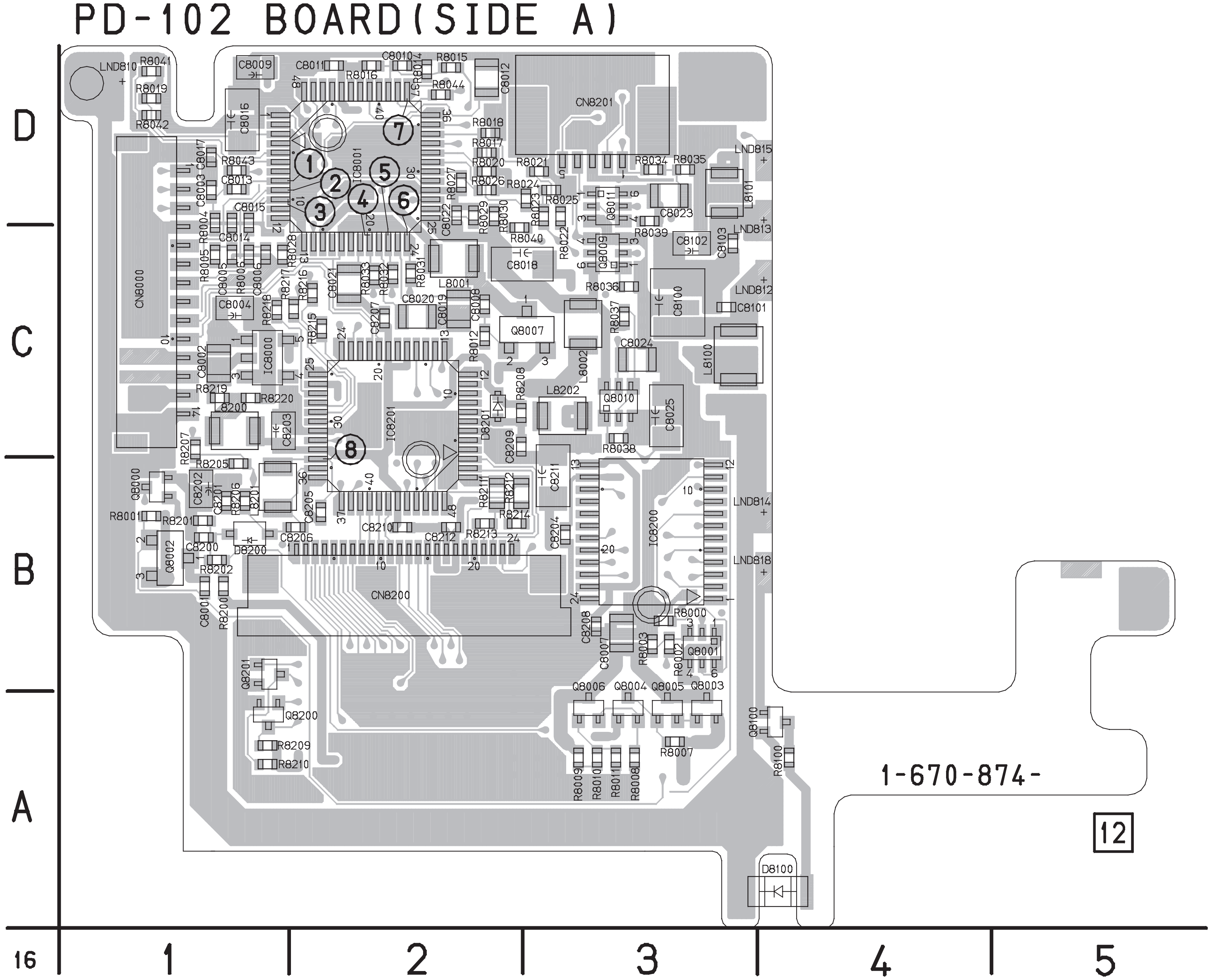



PD-102 BOARD(2/2)
TIMING GENERATOR(TG BLOCK)
-REF.NO.:10000SERIES-
XX MARK:NO MOUNT
NO MARK:REC/PB MODE
R :REC MODE
P :PB MODE
IC8201
TIMING GENERATOR
IC8201
CXD2446R-T4
IC8200
EVR
IC8200 MB40D001PFV-G-BND-ER
Q8200 UN9213J-(K8).SO
Q8201 UN9213J-(K8).SO
SWITCH
SWITCH
LCD901
2.5INCH LCD UNIT
CN8200 24P
CN8201 5P
CPC
(FOR CHECK)
•SIGNAL PATH
VIDEO SIGNAL
CHROMA
Y
Y/CHROMA
REC
PB
TO(1/2)
P_12V_Y
4.6V_Y
REG_GND_Y
3.0V_Y
P_3.0V_Y
PANEL_15.5V_Y
PSIG_Y
G_Y
R_Y
B_Y
COM_Y
PD-102 BOARD (2/2)
⑧ IC8201 ㉞
CAMERA REC/PB
15.9kHz
3.0Vp-p

TIMING GENERATOR
PD-102 (2/2)

PD-102 (RGB DRIVER, TIMING GENERATOR) PRINTED WIRING BOARD

— Ref. No. PD-102 Board; 10,000 Series —


PD-102 BOARD(SIDE A)
D
C
B
A
16
1
2
3
4
5
1-670-874-
12
IC8001
IC8201
IC8200
IC8000
CN8000
CN8200
CN8201
Q8007
Q8010
Q8001
Q8003
Q8004
Q8005
Q8006
Q8000
Q8002
Q8200
Q8201
Q8100
L8001
L8002
L8100
L8101
L8202
D8100
D8200
LND810
LND812
LND813
LND814
LND815
LND818
①
②
③
④
⑤
⑥
⑦
⑧

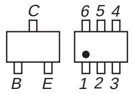
PD-102 BOARD

C8001	B-1	D8200	B-1	R8020	D-2
C8002	C-1	D8201	C-2	R8021	D-3
C8003	D-1	IC8000	C-1	R8022	D-3
C8004	C-1	IC8001	D-2	R8023	D-3
C8005	C-1	IC8200	B-3	R8024	D-2
C8006	C-1	IC8201	C-2	R8025	D-3
C8007	B-3	L8001	C-2	R8026	D-2
C8008	C-2	L8002	C-3	R8027	D-2
C8009	D-1	L8100	C-3	R8028	C-1
C8010	D-2	L8101	D-3	R8029	D-2
C8011	D-2	L8200	C-1	R8030	D-2
C8012	D-2	L8201	B-1	R8031	C-2
C8013	D-1	L8202	C-3	R8032	C-2
C8014	D-1	Q8000	B-1	R8033	C-2
C8015	D-1	Q8001	B-3	R8034	D-3
C8016	D-1	Q8003	A-3	R8035	D-3
C8017	D-1	Q8004	A-3	R8036	C-3
C8018	C-2	Q8005	A-3	R8037	C-3
C8019	C-2	Q8006	A-3	R8038	C-3
C8020	C-2	Q8007	C-2	R8039	D-3
C8021	C-2	Q8009	C-3	R8040	C-2
C8022	D-2	Q8010	C-3	R8041	D-1
C8023	D-3	Q8011	D-3	R8042	D-1
C8024	C-3	Q8100	A-4	R8043	D-1
C8025	C-3	Q8200	A-1	R8044	D-2
C8027	C-2	Q8200	B-1	R8100	A-4
C8100	C-3	Q8201	B-1	R8120	A-1
C8101	C-3	R8000	B-3	R8200	B-1
C8102	C-3	R8001	B-1	R8201	B-1
C8103	C-3	R8002	B-3	R8202	B-1
C8200	B-1	R8003	B-3	R8205	B-1
C8201	B-1	R8004	D-1	R8206	B-1
C8202	B-1	R8005	C-1	R8207	C-1
C8203	C-1	R8006	C-1	R8208	C-2
C8204	B-3	R8007	A-3	R8209	A-1
C8205	B-2	R8008	A-3	R8211	B-2
C8206	B-2	R8009	A-3	R8212	B-2
C8208	B-3	R8010	A-3	R8213	B-2
C8209	C-2	R8011	A-3	R8214	B-2
C8210	B-2	R8012	C-2	R8215	C-2
C8211	B-3	R8014	D-2	R8216	C-2
C8212	B-2	R8015	D-2	R8217	C-1
CN8000	C-1	R8016	D-2	R8218	C-1
CN8200	B-2	R8017	D-2	R8219	C-1
CN8201	D-3	R8018	D-2	R8220	C-1
D8100	A-4	R8019	D-1		

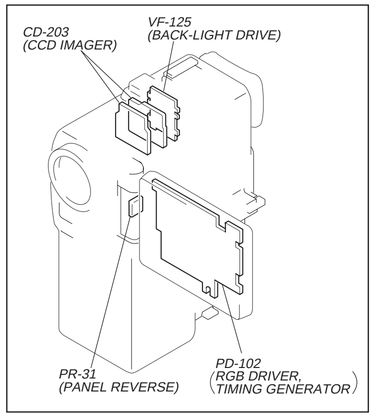
For printed wiring boards

- This board is six-layer print board. However, the patterns of layers two to five have not been included in the diagram.
- Chip parts

Transistor

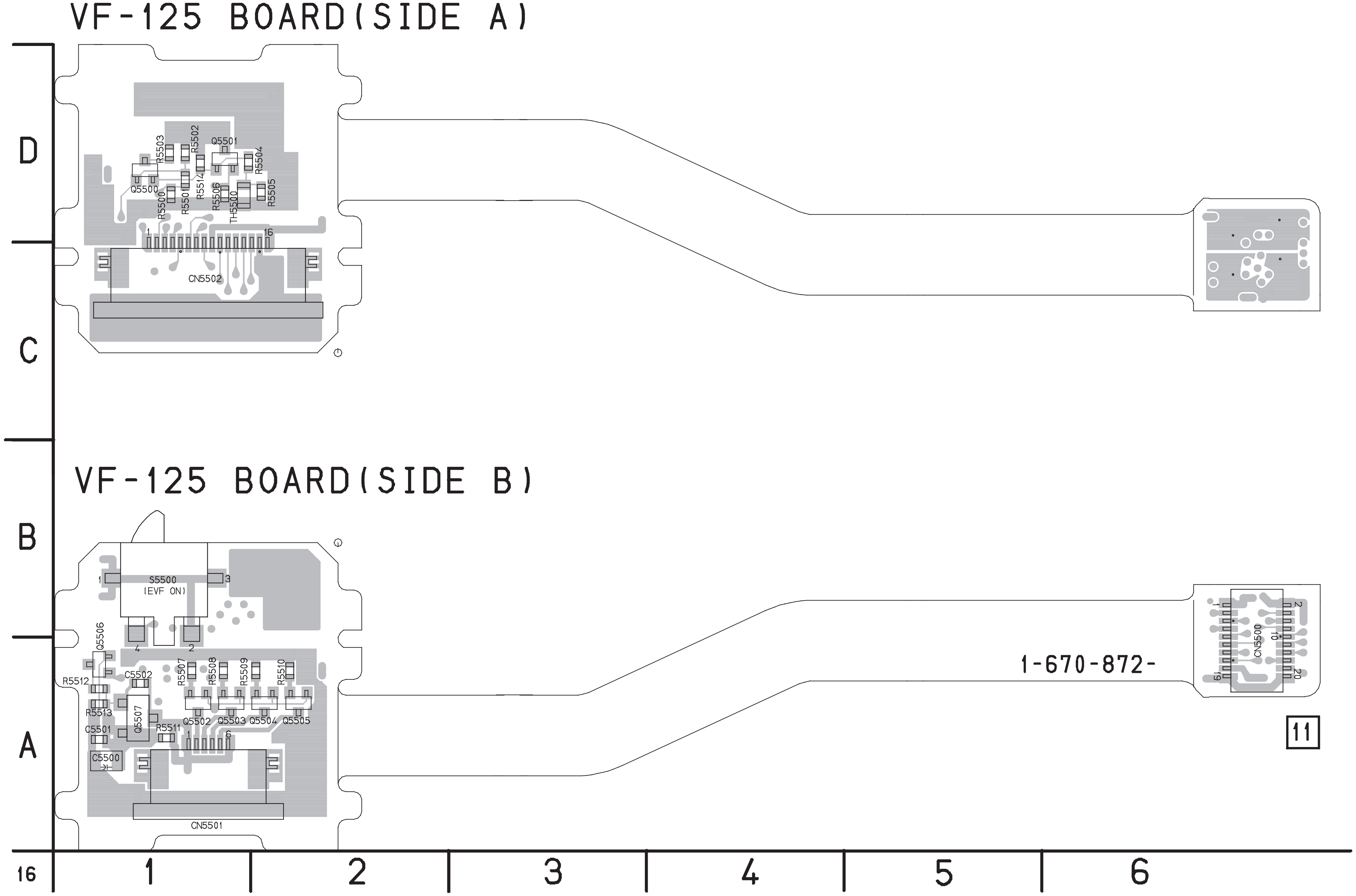


There are few cases that the part printed on this diagram isn't mounted in this model.


CD-203
(CCD IMAGER)
VF-125
(BACK-LIGHT DRIVE)
PR-31
(PANEL REVERSE)
PD-102
(RGB DRIVER,
TIMING GENERATOR)

VF-125 (BACK-LIGHT DRIVER) PRINTED WIRING BOARD

— Ref. No. VF-125 Board; 10,000 Series —


VF-125 BOARD(SIDE A)
VF-125 BOARD(SIDE B)
D
C
B
A
16
1
2
3
4
5
6
R5503
R5502
Q5501
R5504
R5505
Q5500
R5500
R5501
R5514
R5506
TH5500
CN5502
S5500
(EVF ON)
Q5506
R5512
C5502
R5507
R5508
R5509
R5510
R5513
Q5507
C5501
R5511
Q5502
Q5503
Q5504
Q5505
C5500
CN5501
CN5500
1-670-872-
11

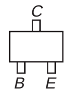
VF-125 BOARD

C5500	A-1
C5501	A-1
C5502	A-1
CN5500	B-6
CN5501	A-1
CN5502	C-1
Q5500	D-1
Q5501	D-1
Q5502	A-1
Q5503	A-1
Q5504	A-1
Q5505	A-2
Q5506	A-1
Q5507	A-1
R5500	D-1
R5501	D-1
R5502	D-1
R5503	D-1
R5504	D-1
R5505	D-1
R5506	D-1
R5507	A-1
R5508	A-1
R5509	A-1
R5510	A-2
R5511	A-1
R5512	A-1
R5513	A-1
R5514	D-1
S5500	B-1
TH5500	D-1

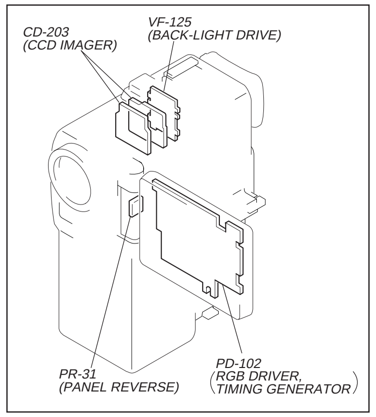
For printed wiring boards

- This board is six-layer print board. However, the patterns of layers two to five have not been included in the diagram.
- Chip parts

Transistor



There are few cases that the part printed on this diagram isn't mounted in this model.


CD-203
(CCD IMAGER)
VF-125
(BACK-LIGHT DRIVE)
PR-31
(PANEL REVERSE)
PD-102
(RGB DRIVER,
TIMING GENERATOR)

VF-125 BOARD

BACK-LIGHT DRIVE

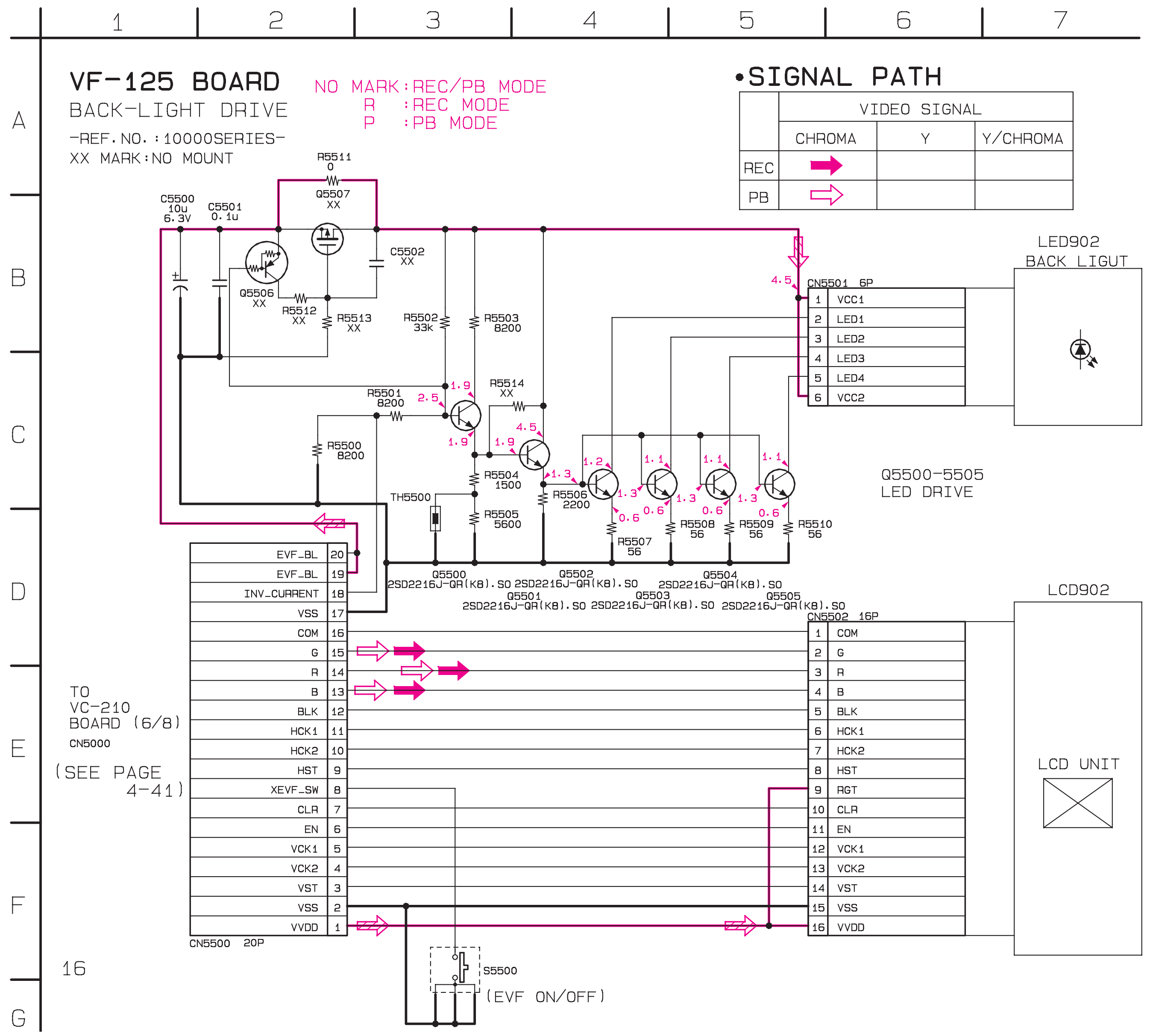
-REF. NO. :10000SERIES-

XX MARK:NO MOUNT

NO MARK:REC/PB MODE
R :REC MODE
P :PB MODE

•SIGNAL PATH

	VIDEO SIGNAL		
	CHROMA	Y	Y/CHROMA
REC	➡		
PB	⇨		

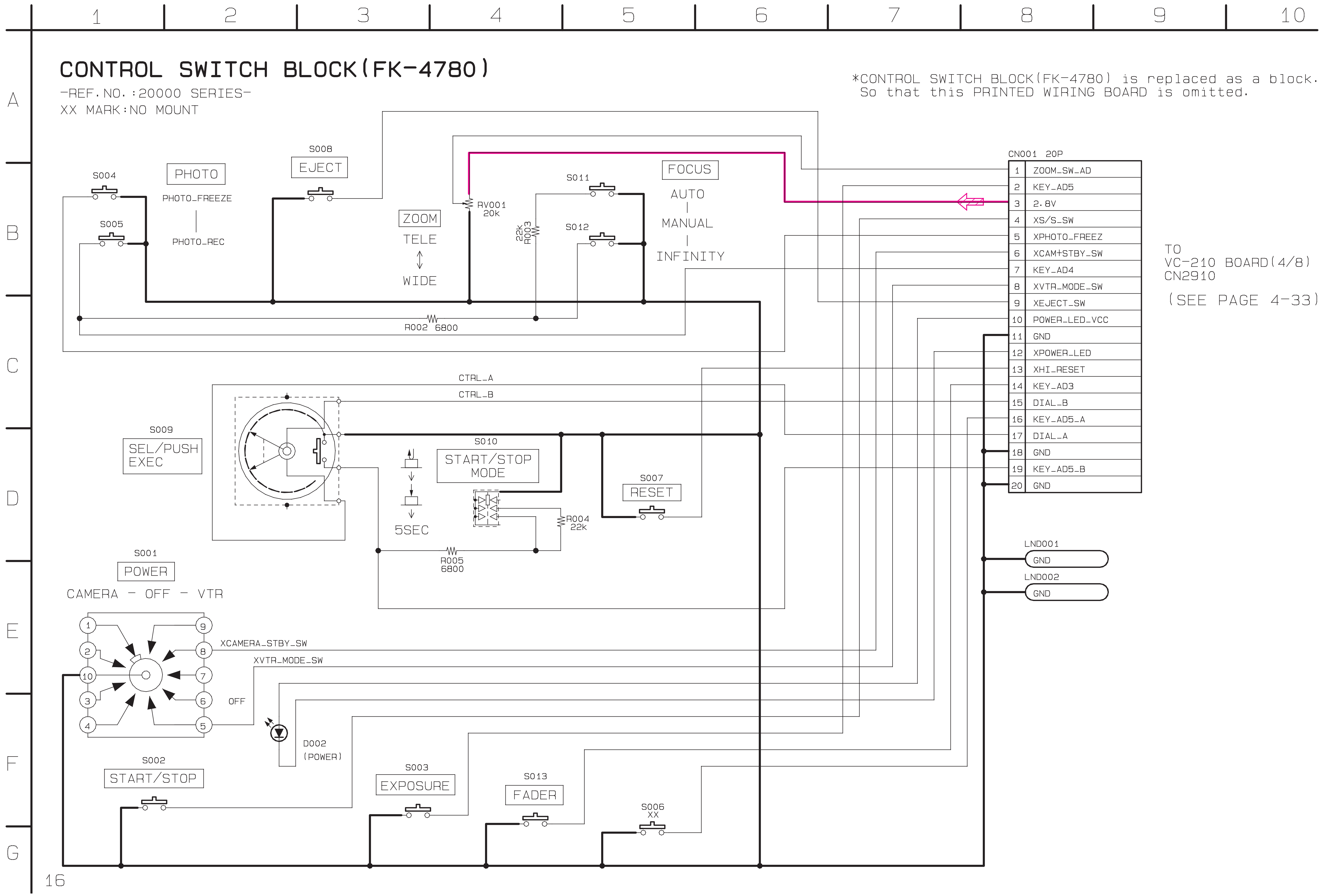

1
2
3
4
5
6
7
A
B
C
D
E
F
G
R5511
0
Q5507
XX
C5500
10u
6.3V
C5501
0.1u
Q5506
XX
R5512
XX
R5513
XX
C5502
XX
R5502
33k
R5503
8200
R5501
8200
R5514
XX
R5500
8200
R5504
1500
R5505
5600
TH5500
R5506
2200
R5507
56
R5508
56
R5509
56
R5510
56
4.5
2.5
1.9
1.9
1.9
4.5
1.3
1.2
1.1
1.1
1.1
1.3
1.3
1.3
0.6
0.6
0.6
0.6
Q5500
2SD2216J-QR(K8).SO
Q5501
2SD2216J-QR(K8).SO
Q5502
2SD2216J-QR(K8).SO
Q5503
2SD2216J-QR(K8).SO
Q5504
2SD2216J-QR(K8).SO
Q5505
2SD2216J-QR(K8).SO
Q5500-5505
LED DRIVE
CN5501 6P
1 VCC1
2 LED1
3 LED2
4 LED3
5 LED4
6 VCC2
LED902
BACK LIGUT
LCD902
LCD UNIT
CN5502 16P
1 COM
2 G
3 R
4 B
5 BLK
6 HCK1
7 HCK2
8 HST
9 RGT
10 CLR
11 EN
12 VCK1
13 VCK2
14 VST
15 VSS
16 VVDD
CN5500 20P
EVF_BL 20
EVF_BL 19
INV_CURRENT 18
VSS 17
COM 16
G 15
R 14
B 13
BLK 12
HCK1 11
HCK2 10
HST 9
XEVF_SW 8
CLR 7
EN 6
VCK1 5
VCK2 4
VST 3
VSS 2
VVDD 1
TO
VC-210
BOARD (6/8)
CN5000
(SEE PAGE
4-41)
S5500
(EVF ON/OFF)
16

CONTROL SWITCH BLOCK(FK-4780)

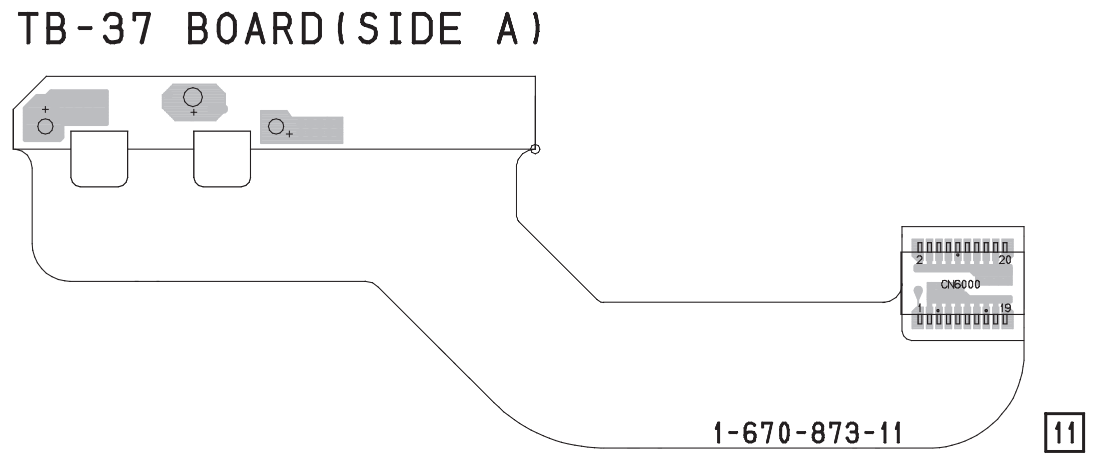
-REF.NO.:20000 SERIES-

XX MARK:NO MOUNT

*CONTROL SWITCH BLOCK(FK-4780) is replaced as a block.
So that this PRINTED WIRING BOARD is omitted.

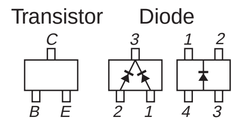

1
2
3
4
5
6
7
8
9
10
A
B
C
D
E
F
G
S004
S005
PHOTO
PHOTO_FREEZE
PHOTO_REC
S008
EJECT
ZOOM
TELE
WIDE
RV001
20k
22k
R003
S011
S012
FOCUS
AUTO
MANUAL
INFINITY
R002 6800
CTRL_A
CTRL_B
S009
SEL/PUSH
EXEC
S010
START/STOP
MODE
5SEC
R004
22k
R005
6800
S007
RESET
S001
POWER
CAMERA - OFF - VTR
1
2
3
4
5
6
7
8
9
10
OFF
XCAMERA_STBY_SW
XVTR_MODE_SW
D002
(POWER)
S002
START/STOP
S003
EXPOSURE
S013
FADER
S006
XX
CN001 20P
1 ZOOM_SW_AD
2 KEY_AD5
3 2.8V
4 XS/S_SW
5 XPHOTO_FREEZ
6 XCAM+STBY_SW
7 KEY_AD4
8 XVTR_MODE_SW
9 XEJECT_SW
10 POWER_LED_VCC
11 GND
12 XPOWER_LED
13 XHI_RESET
14 KEY_AD3
15 DIAL_B
16 KEY_AD5_A
17 DIAL_A
18 GND
19 KEY_AD5_B
20 GND
LND001
GND
LND002
GND
TO
VC-210 BOARD(4/8)
CN2910
(SEE PAGE 4-33)
16

TB-37 (BATTERY TERMINAL) PRINTED WIRING BOARD

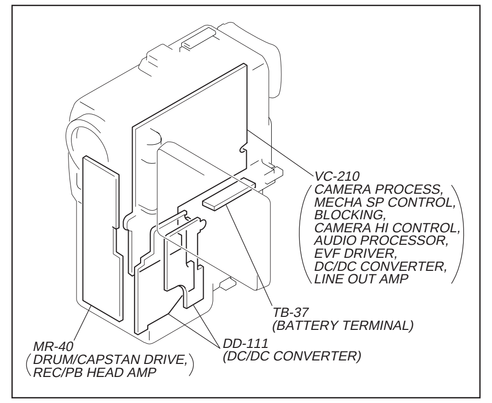

TB-37 BOARD(SIDE A)
CN6600
1-670-873-11
11

For printed wiring boards

- This board is six-layer print board. However, the patterns of layers two to five have not been included in the diagram.
- Chip parts


Transistor
Diode
C
B
E
3
2
1
1
2
4
3

There are few cases that the part printed on this diagram isn't mounted in this model.

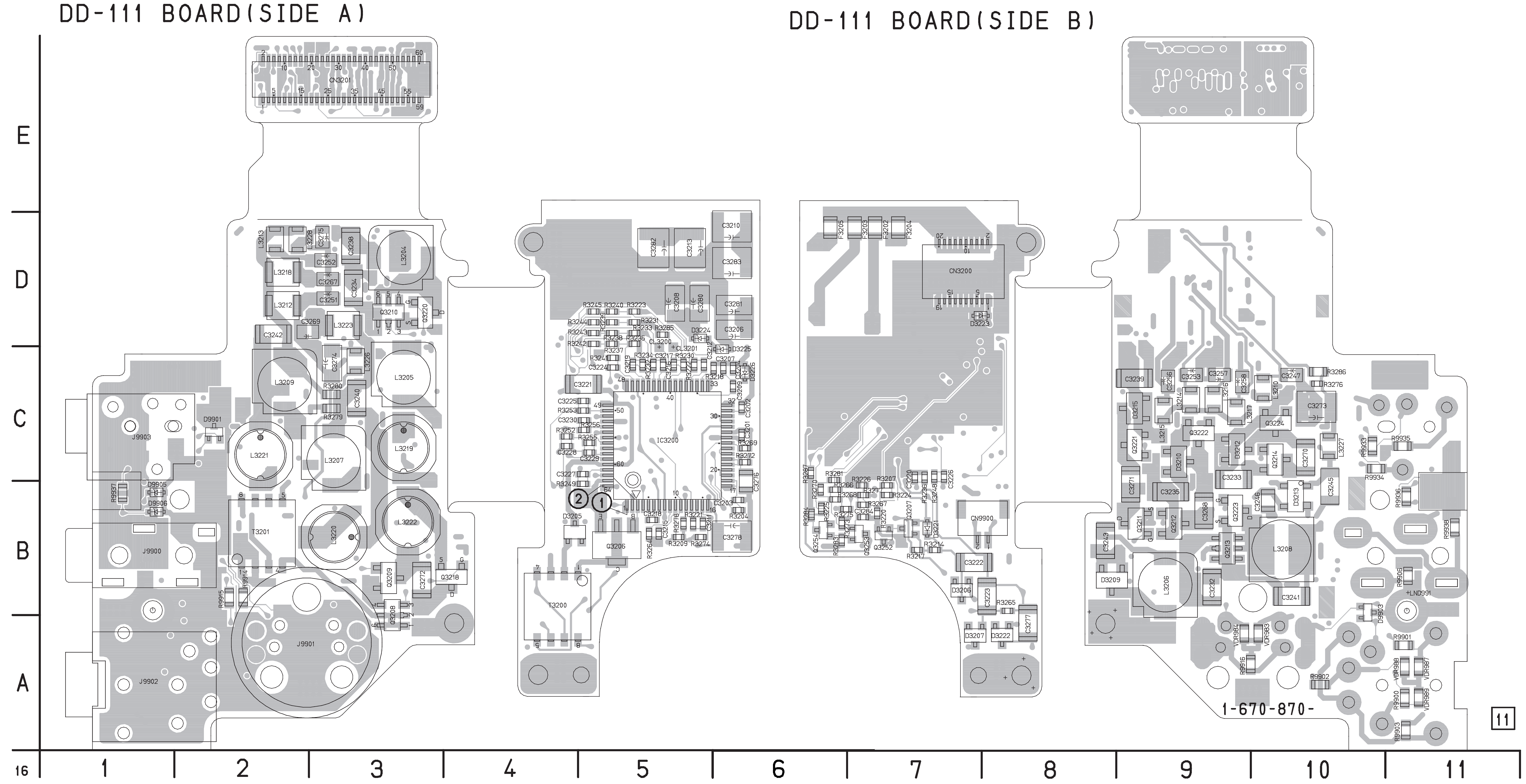

VC-210
(CAMERA PROCESS, MECHA SP CONTROL, BLOCKING, CAMERA HI CONTROL, AUDIO PROCESSOR, EVF DRIVER, DC/DC CONVERTER, LINE OUT AMP)
TB-37
(BATTERY TERMINAL)
DD-111
(DC/DC CONVERTER)
MR-40
(DRUM/CAPSTAN DRIVE, REC/PB HEAD AMP)

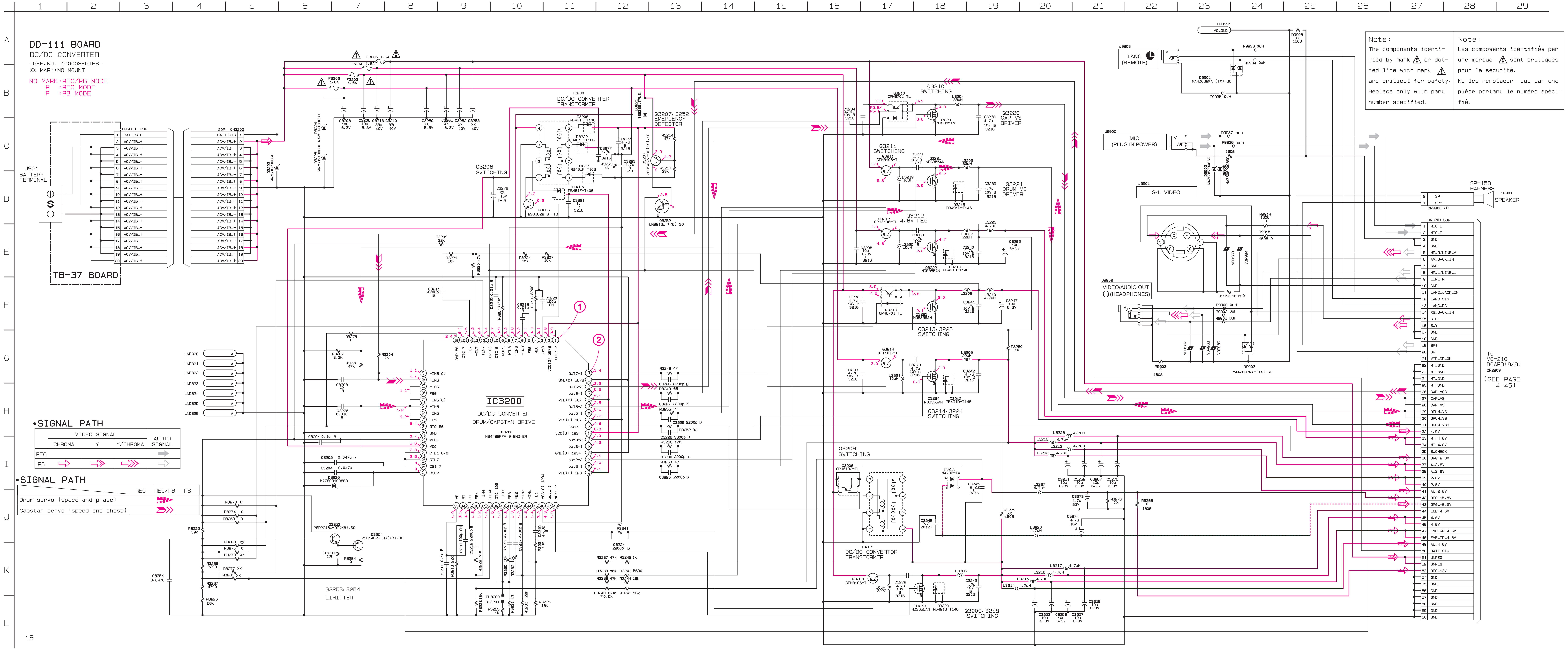
DD-111 BOARD

C3201	C-6	D3210	C-9	R3222	C-5
C3202	C-6	D3212	C-9	R3223	D-5
C3203	B-6	D3213	B-10	R3224	B-7
C3204	C-6	D3215	C-9	R3225	B-6
C3206	D-6	D3221	B-7	R3226	B-7
C3207	C-6	D3222	A-8	R3230	C-5
C3208	D-5	D3223	D-7	R3231	D-5
C3209	C-6	D3224	D-5	R3232	C-5
C3210	D-6	D3225	C-6	R3233	D-5
C3211	B-5	D3226	C-6	R3234	C-5
C3212	C-5	D9901	C-2	R3235	D-5
C3213	D-5	D9903	B-10	R3236	C-7
C3215	B-5	D9905	B-1	R3237	D-5
C3216	C-5	D9906	B-1	R3238	D-5
C3217	C-5	F3202	D-7	R3239	D-5
C3218	B-5	F3203	D-7	R3240	D-5
C3219	C-5	F3204	D-7	R3241	C-5
C3220	C-7	F3205	D-6	R3242	D-5
C3221	C-5	IC3200	C-5	R3243	D-5
C3222	B-7	J9900	B-1	R3244	D-5
C3223	B-8	J9901	A-2	R3245	D-5
C3224	C-5	J9902	A-1	R3248	C-7
C3225	C-5	J9903	C-1	R3249	B-5
C3226	C-7	L3204	D-3	R3252	C-4
C3227	C-5	L3205	C-3	R3253	C-5
C3228	C-4	L3206	B-9	R3255	C-5
C3229	C-5	L3207	C-3	R3256	C-5
C3230	C-5	L3208	B-10	R3264	B-5
C3232	B-9	L3209	C-2	R3265	B-8
C3233	B-9	L3210	C-10	R3266	B-6
C3234	D-3	L3212	D-2	R3267	B-7
C3235	B-9	L3213	D-2	R3268	B-6
C3238	D-3	L3214	C-9	R3269	C-6
C3239	C-9	L3215	C-9	R3270	B-6
C3240	C-3	L3216	C-9	R3272	C-6
C3241	B-10	L3217	C-9	R3273	B-6
C3242	D-2	L3218	D-2	R3274	B-5
C3243	B-8	L3219	C-3	R3275	B-6
C3245	B-10	L3220	B-3	R3276	C-10
C3246	B-10	L3221	C-2	R3277	B-7
C3247	C-10	L3222	B-3	R3278	B-5
C3251	D-3	L3223	D-3	R3279	C-3
C3252	D-3	L3226	C-3	R3280	C-3
C3253	C-9	L3227	C-10	R3281	B-6
C3256	C-9	L3228	D-2	R3283	B-6
C3257	C-9	Q3206	B-5	R3284	B-6
C3258	C-9	Q3207	B-7	R3285	D-5
C3267	D-3	Q3208	B-3	R3286	C-10
C3268	B-9	Q3209	B-3	R3287	C-6
C3269	D-3	Q3210	D-3	R9900	A-11
C3270	C-10	Q3211	B-9	R9901	A-11
C3271	B-9	Q3212	B-9	R9902	A-10
C3272	B-3	Q3213	B-9	R9903	A-11
C3273	C-10	Q3214	C-10	R9906	B-11
C3274	C-3	Q3218	B-4	R9914	B-2
C3275	D-3	Q3220	D-3	R9915	B-2
C3276	B-6	Q3221	C-9	R9916	A-9
C3277	A-8	Q3222	C-9	R9933	C-10
C3278	B-6	Q3223	B-9	R9934	C-10
C3280	D-5	Q3224	C-10	R9935	C-11
C3281	D-6	Q3252	B-7	R9936	B-11
C3282	D-5	Q3253	B-7	R9937	B-1
C3283	D-6	Q3254	B-6	R9938	B-11
C3284	B-7	R3204	B-6	T3200	B-4
CN3200	D-7	R3207	B-7	T3201	B-2
CN3201	E-3	R3209	B-5	VDR983	A-10
CN9900	B-8	R3214	B-7	VDR984	A-9
D3205	B-4	R3217	B-7	VDR987	A-11
D3206	B-7	R3218	C-6	VDR988	A-11
D3207	A-7	R3220	B-7	VDR989	A-11
D3209	B-8	R3221	B-5		

DD-111 (DC/DC CONVERTER) PRINTED WIRING BOARD

— Ref. No. DD-111 Board; 10,000 Series —


DD-111 BOARD(SIDE A)
DD-111 BOARD(SIDE B)
E
D
C
B
A
16
1
2
3
4
5
6
7
8
9
10
11
CN3201
CN3200
CN9900
IC3200
J9900
J9901
J9902
J9903
L3204
L3205
L3207
L3209
L3219
L3221
L3222
L3208
L3206
T3200
T3201
1-670-870-
11



1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29
A B C D E F G H I J K L
J901 BATTERY TERMINAL
TB-37 BOARD
CN6000 20P
CN3200 20P
IC3200
DC/DC CONVERTER DRUM/CAPSTAN DRIVE
IC3200 MB44080PFV-G-BND-ER
T3200 DC/DC CONVERTER TRANSFORMER
Q3206 SWITCHING
Q3207, 3252 EMERGENCY DETECTOR
Q3210 SWITCHING
Q3220 CAP VS DRIVER
Q3211 SWITCHING
Q3221 DRUM VS DRIVER
Q3212 4.8V REG
Q3213, 3223 SWITCHING
Q3214, 3224 SWITCHING
Q3208 SWITCHING
T3201 DC/DC CONVERTOR TRANSFORMER
Q3209, 3218 SWITCHING
Q3253, 3254 LIMITTER
J9903 LANC (REMOTE)
J9900 MIC (PLUG IN POWER)
J9901 S-1 VIDEO
J9902 VIDEO/AUDIO OUT (HEADPHONES)
SP-158 HARNESS
SP901 SPEAKER
CN9900 2P
CN3201 60P
TO VC-210 BOARD (8/8) CN2909 (SEE PAGE 4-46)
①
②
16

DD-111 BOARD

DC/DC CONVERTER

-REF.NO.:10000SERIES-
XX MARK:NO MOUNT

NO MARK:REC/PB MODE
R :REC MODE
P :PB MODE

Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Note:
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

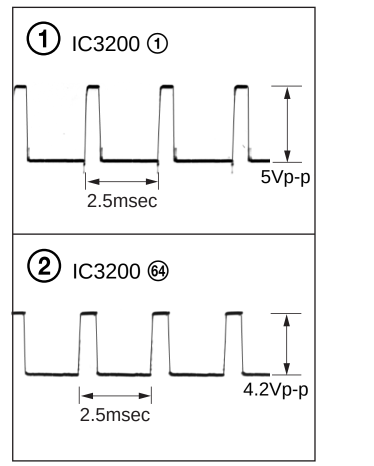
•SIGNAL PATH

	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
REC				➡
PB	⇨	⇨»	⇨⋙	⇨

•SIGNAL PATH

	REC	REC/PB	PB
Drum servo (speed and phase)		➡»	
Capstan servo (speed and phase)		➡»	

DD-111 BOARD
CAMERA REC/PB



SECTION 5
ADJUSTMENTS

5-1. CAMERA SECTION ADJUSTMENT

When performing adjustments, refer to the layout diagrams for adjustment related parts beginning from page 5-46.

NTSC model : DCR-PC1
PAL model : DCR-PC1E

1-1. PREPARATIONS BEFORE ADJUSTMENT (CAMERA SECTION)

1-1-1. List of Service Tools

- Oscilloscope
- Color monitor
- Regulated power supply
- Digital voltmeter
- Vectorscope
- Adjustment screwdriver

Ref. No.	Name	Parts Code	Usage
J-1	Filter for color temperature correction (C14)	J-6080-058-A	Auto white balance adjustment/check White balance adjustment/check
J-2	ND filter 1.0	J-6080-808-A	White balance check
	ND filter 0.3	J-6080-818-A	White balance check
J-3	Pattern box PTB-450	J-6082-200-A	
J-4	Color chart for pattern box	J-6020-250-A	
J-5	Adjustment remote commander (RM-95 upgraded) Note	J-6082-053-B	
J-6	Siemens star chart	J-6080-875-A	For checking the flange back
J-7	Clear chart for pattern box	J-6080-621-A	
J-8	CPC-6 flexible jig	J-6082-370-A	For adjusting the video section For adjusting the viewfinder
J-9	CPC-6 terminal board jig	J-6082-371-A	For adjusting the video section For adjusting the viewfinder
J-10	Extension cable (18P, 0.5mm)	J-6082-374-A	For extension of the capstan motor MR-40 board (CN2501)

Note: If the microprocessor IC in the adjustment remote commander is not the new microprocessor (UPD7503G-C56-12), the pages cannot be switched. In this case, replace with the new microprocessor (8-759-148-35).

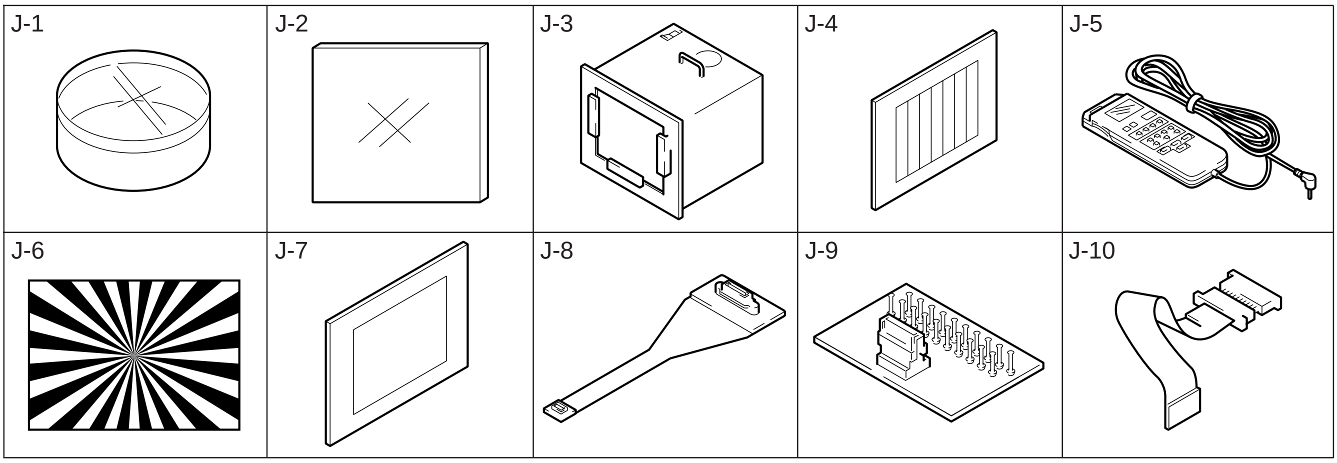


Fig. 5-1-1

1-1-2. Preparations

Note 1: For details of how remove the cabinet and boards, refer to “2. DISASSEMBLY”.

Note 2: When performing only the adjustments, the lens block and boards need not be disassembled.

Note 3: As the power supply of this machine, use the AC adapter that is unique to this machine. If the power is supplied from an external regulated power supply (4.2 Vdc) to the BATTERY terminal of this machine, the power of this machine will be turned off and the machine is no longer operable in about 10 seconds after the power is turned on. To use an external regulated power supply, connect the adjustment remote commander and set its HOLD switch to the ADJ (ON) position.

1) Connect the required equipment according to Fig. 5-1-3.
2) As removing the MR-40 board CN2507 (2P, 1.0 mm), means removing the lithium 3 V power supply, data such as date, time, user-set menus will be lost. After completing adjustments, reset these data. If the MR-40 board CN2507 has been removed, the self-diagnosis data, data on history of use (total drum rotation hours, the initial date of power-on by user and the last date of dew condensation) will be lost. Before removing the MR-40 board CN2507, note down the self-diagnosis data and the data on history use (data of page: 2, address: A2 through AA). (Refer to “SELF-DIAGNOSIS FUNCTION” for the self-diagnosis data, and to "5-4. Service Mode" for the data on the history use.)
3) The cabinet (R) (Operation switch block: ME4780, LCD block and speaker) needs to be connected during menu operations. To remove the cabinet (R), disconnect the following connectors.
    1. VC-210 board CN2202 (6P, 0.5 mm) (ME4780)
    2. DD-111 board CN9900 (2P, 1.0 mm) (Speaker)
    3. VC-210 board CN2201 (2P, 1.0 mm) (LCD block)
    4. VC-210 board CN2906 (14P, 1.0 mm) (LCD block)
4) View finder and microphone unit need not be connected during adjustments. To remove them, disconnect the following connectors.
    1. VC-210 board CN5000 (20P, 0.5 mm)
    2. VC-210 board CN2001 (4P, 1.0 mm)
5) The cabinet (L) (Operation switch block: FK4780) need not be connected during adjustment if the “Forced VTR Power ON” mode is set. To remove the cabinet (L), disconnect the following connectors.
    - VC-210 board CN2910 (30P, 0.5 mm)

Note 4: How to Set the “Forced Camera Power ON” Mode
1) Select page: 0, address: 01, and set data: 01.
2) Select page: D, address: 10, set data: 01, and press the PAUSE button of the adjustment remote commander.
The above procedure will enable the camera power to be turned on with the cabinet (L) (Operation switch block: FK4780) removed. After completing adjustments, be sure to exit the “Forced Camera Power ON” mode.

Note 5: How to Exit the “Forced Camera Power ON” Mode
1) Select page: 0, address: 01, and set data: 01.
2) Select page: D, address: 10, set data: 00, and press the PAUSE button of the adjustment remote commander.
3) Select page: 0, address: 01, and set data: 00.

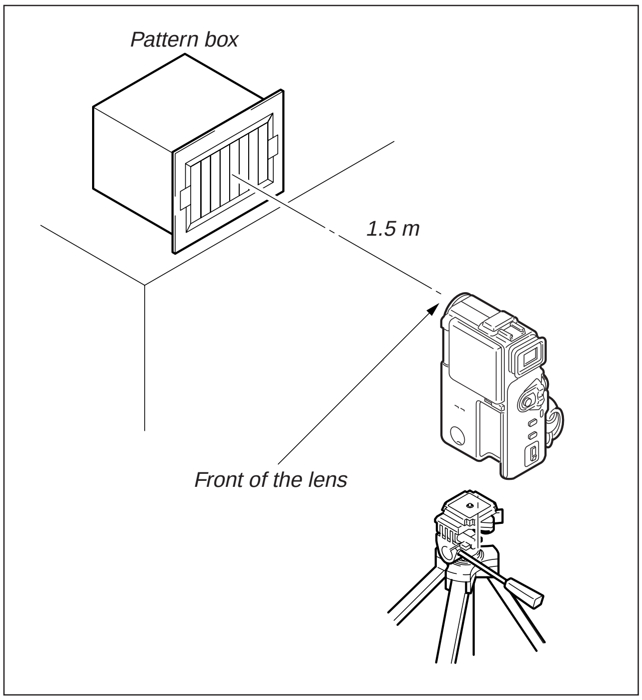


Fig. 5-1-2

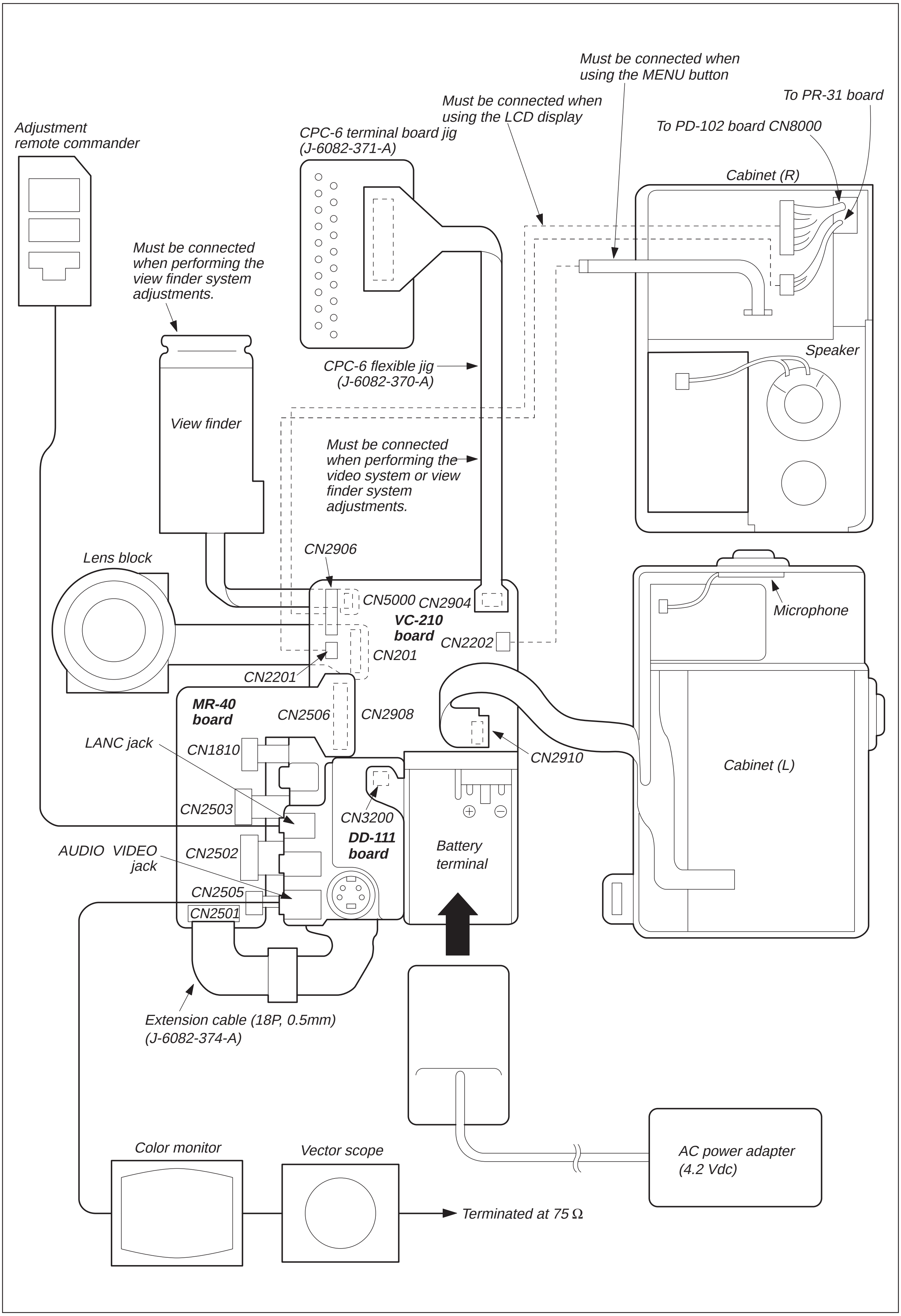

Must be connected when using the MENU button
To PR-31 board
Must be connected when using the LCD display
To PD-102 board CN8000
Adjustment remote commander
CPC-6 terminal board jig (J-6082-371-A)
Cabinet (R)
Must be connected when performing the view finder system adjustments.
Speaker
CPC-6 flexible jig (J-6082-370-A)
View finder
Must be connected when performing the video system or view finder system adjustments.
Lens block
CN2906
CN5000
CN2904
VC-210 board
CN2202
CN201
Microphone
CN2201
MR-40 board
CN2506
CN2908
LANC jack
CN1810
CN2910
Cabinet (L)
CN2503
CN3200
DD-111 board
AUDIO VIDEO jack
CN2502
Battery terminal
CN2505
CN2501
Extension cable (18P, 0.5mm) (J-6082-374-A)
Color monitor
Vector scope
AC power adapter (4.2 Vdc)
Terminated at 75 Ω

Fig. 5-1-3

1-1-3. Precaution

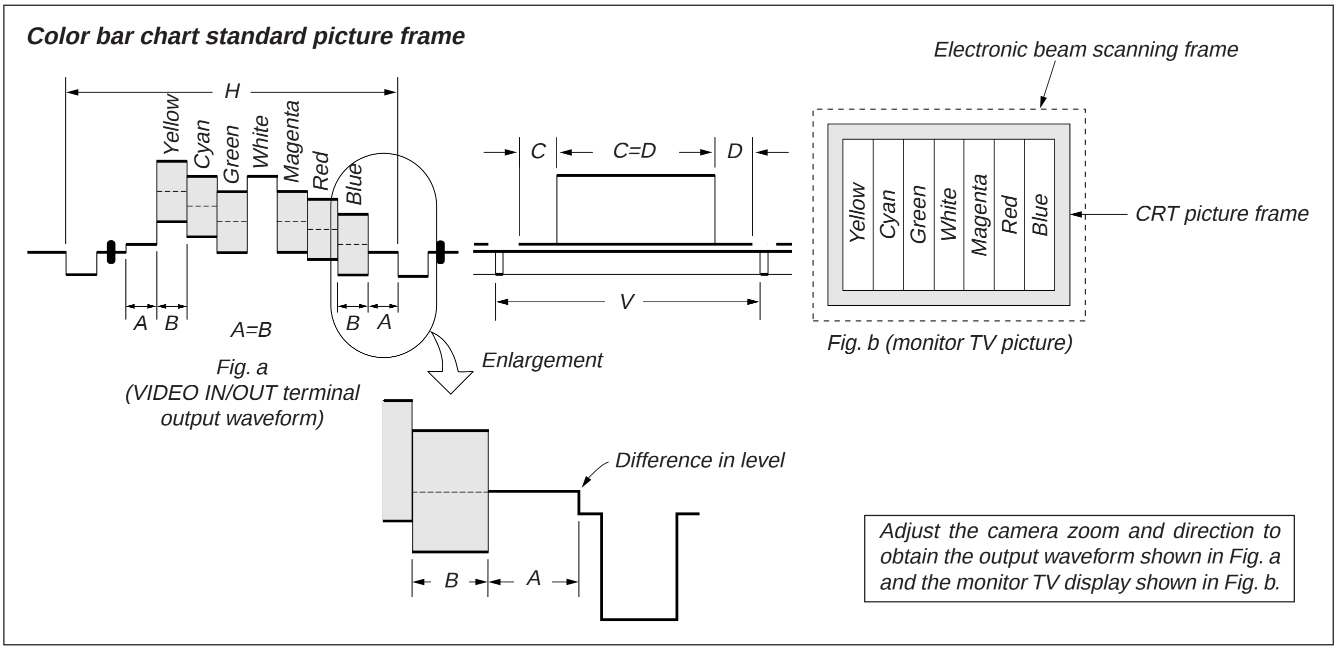
1. Setting the Switch

Unless otherwise specified, set the switches as follows and perform adjustments without loading cassette.

1. POWER switch (FK4780) .... CAMERA
2. DEMO MODE (Menu display) .... OFF
3. DIGITAL ZOOM (Menu display) .... OFF
4. STEADY SHOT (Menu display) .... OFF
5. DISPLAY (ME4780) .... ON
6. DISPLAY (Menu display) .... V-OUT/LCD
7. FOCUS (FK4780) .... MANUAL
8. DIGITAL EFFECT (ME4780).. OFF
9. PROGRAM AE (Menu display) .... AUTO
10. PICTURE EFFECT (Menu display) .... OFF
11. WHITE BALANCE (Menu display) .... AUTO
12. AUTO SHUTTER (Menu display) .... OFF
13. 16 : 9 WIDE (Menu display)... OFF

2. Order of Adjustments

Basically carry out adjustments in the order given.


Color bar chart standard picture frame
H
Yellow
Cyan
Green
White
Magenta
Red
Blue
A
B
A=B
B
A
Fig. a
(VIDEO IN/OUT terminal
output waveform)
Enlargement
C
C=D
D
V
Electronic beam scanning frame
CRT picture frame
Fig. b (monitor TV picture)
Difference in level
B
A

Adjust the camera zoom and direction to obtain the output waveform shown in Fig. a and the monitor TV display shown in Fig. b.

Fig. 5-1-4

3. Subjects

1) Color bar chart (Standard picture frame)
   When performing adjustments using the color bar chart, adjust the picture frame as shown in Fig. 5-1-4 with the equipment setup shown in Fig. 5-1-2. (Standard picture frame)
2) Clear chart
   Remove the color bar chart from the pattern box and insert a clear chart in its place after the “Color bar chart standard picture frame” is established. (Do not perform zoom operations after the “Color bar chart standard picture frame” is established.)
3) Flange back adjustment chart
   Make the chart shown in Fig. 5-1-5 using A0 size (1189 mm × 841 mm) black and white vellum paper.

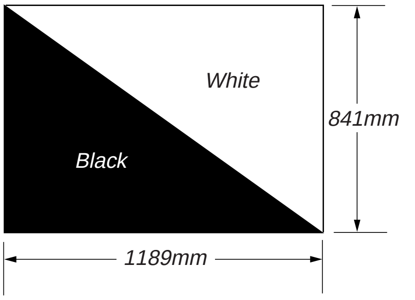

White
Black
841mm
1189mm

Fig. 5-1-5

Note: Use matte vellum paper bigger than A0, and make sure the edges of the black and white paper joined together are not rough.

1-2. INITIALIZATION OF F, E PAGE DATA

1. Initializing the F, E Page Data

Note: If the F, E page data has been initialized, the following adjustments need to be performed again.
1) Modification of F, E Page Data
2) Camera System Adjustments

Adjusting page	F
Adjusting Address	10 to FF
Adjusting page	E
Adjusting Address	00 to 3D

Initializing Method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 6, address: 01, set data: 2D (NTSC) or data: 2F (PAL), and press the PAUSE button of the adjustment remote commander.
3) Select page: 6, address: 03, set data: 01, and press the PAUSE button of the adjustment remote commander.
4) Select page: 6, address: 02, and check that the data is “01”.
5) Perform “Modification of F, E Page Data”.

2. Modification of F, E Page Data

If the F, E PAGE data has been initialized, change the data of the “Fixed data-2” address shown in the following tables by manual input.

Modifying Method:

1) Before changing the data, select page: 0, address: 01, and set data: 01.
2) New data for changing are not shown in the tables because they are different in destination. When changing the data, copy the data built in the same model.
   Note: If copy the data built in the different model, the camcorder may not operate.
3) When changing the data, press the PAUSE button of the adjustment remote commander each time when setting new data to write the data in the non-volatile memory.
4) Check that the data of adjustment addresses is the initial value. If not, change the data to the initial value.

Processing After Modifying Data:

1) Select page :2, address:00, set data: 29, and press the PAUSE button of the adjustment remote commander.
2) Select page :2, address:01, set data: 29, and press the PAUSE button of the adjustment remote commander.
3) Perform “Camera System Adjustments”.

3. F Page Table

Note: Fixed data-1 : Initialized data (Refer to “1. Initializing the F, E Page Data”.)
Fixed data-2 : Modified data (Refer to “2. Modification of F, E Page Data”).

Address	Initial value		Remark
	NTSC	PAL	
00 to 0F			
10			Fixed data-1
11			(Initialized data)
12			
13			
14			
15			
16			
17			
18			
19			
1A			
1B			
1C	80	80	36MHz origin osc adj.
1D			Fixed data-1
1E	40	40	Hall adj.
1F	5E	5E	
20	90	B4	AWB & LV standard data input
21	3E	55	
22	43	86	
23	59	7B	
24	51	51	Flange back adj.
25	19	19	
26	22	22	
27	20	20	
28	93	93	
29	13	13	
2A			Fixed data-1
2B			(Initialized data)
2C	64	64	Max gain adj.
2D			Fixed data-1
2E	22	22	Color reproduction adj.
2F			Fixed data-1
30	27	24	Color reproduction adj.
31			Fixed data-1
32			(Initialized data)
33			
34	80	80	Auto white balance adj.
35	40	40	
36	00	00	Flange back adj.
37	00	00	
38	46	46	
39	00	00	
3A	19	19	
3B	00	00	
3C	2A	2A	
3D	00	00	
3E	80	80	AWB & LV standard data input
3F	7A	7A	

Address	Initial value		Remark
	NTSC	PAL	
40			Fixed data-2
41	60	60	Angular velocity sensor sensitivity adj.
42	60	60	
43	00	00	Optical axis adj.
44	00	00	Color reproduction adj.
45	F1	EF	
46			Fixed data-1 (Initialized data)
47			
48			
49			
4A			
4B			
4C			
4D			
4E			
4F			
50			
51			
52			
53			
54			
55			
56			
57			
58			
59			
5A			
5B			
5C			
5D			
5E			
5F			
60			
61			
62			
63			
64			
65			
66			
67			
68			
69			
6A			
6B			
6C			
6D			
6E			
6F			
70	8A	8A	Hall adj.
71			Fixed data-1 (Initialized data)
72			
73			
74			
75			
76			
77			

Address	Initial value		Remark
	NTSC	PAL	
78			Fixed data-1 (Initialized data)
79			
7A			
7B			
7C			
7D			
7E			
7F			
80			
81			
82			
83			
84			
85			
86			
87			
88			
89			
8A			
8B			
8C			
8D			
8E			
8F			
90			
91			
92			
93			
94			
95			
96			
97			
98			
99			
9A			
9B			
9C			
9D			
9E			
9F			
A0			
A1			
A2			
A3			
A4			
A5			
A6			
A7			
A8			
A9			
AA			
AB			
AC			
AD			
AE			
AF			

Address	Initial value		Remark
	NTSC	PAL	
B0			Fixed data-1
B1			(Initialized data)
B2			
B3			
B4			
B5			
B6			
B7			
B8			
B9			
BA			
BB			
BC			
BD			
BE			
BF			
C0			
C1			
C2			
C3			
C4			
C5			
C6			
C7			
C8			
C9			
CA			
CB			
CC			
CD			
CE			
CF			
D0			
D1			
D2			
D3			
D4			
D5			
D6			
D7			
D8			
D9			
DA			
DB			
DC			
DD			
DE			
DF			
E0			
E1			
E2			
E3			
E4			
E5			
E6			
E7			
E8			Fixed data-1
E9			(Initialized data)
EA			
EB			
EC			
ED			
EE			
EF			
F0			
F1			
F2			
F3			
F4			
F5			
F6			
F7			
F8			
F9			
FA			
FB			
FC			
FD			
FE			
FF			

Table. 5-1-1

4. E Page table

Note: Fixed data-1 : Initialized data (Refer to “1. Initializing the F, E Page Data”.)
Fixed data-2 : Modified data (Refer to “2. Modification of F, E Page Data”).

Address	Initial value		Remark
	NTSC	PAL	
00			Fixed data-1 (Initialized data)
01			
02			
03			
04			
05			
06			
07			
08			
09			
0A			
0B			
0C			
0D			
0E			
0F			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
1A			
1B			
1C			
1D			
1E			
1F			
20			
21			
22			
23			
24			
25			
26			
27			
28			
29			
2A			
2B			
2C			
2D			
2E			
2F			
30			
31			
32			
33			
34			Fixed data-1
35			
36			
37			
38			
39			
3A	73	73	AGC gain calibration adj.
3B	4B	4B	
3C	7E	7E	
3D	B3	B3	
3E to FF			

Table. 5-1-2

1-3. CAMERA SYSTEM ADJUSTMENTS

Before perform the camera system adjustments, check that the specified value of “Base Band Block Adjustment” of “VIDEO SYSTEM ADJUSTMENT” are satisfied.

1. 36 MHz Origin Oscillation Adjustment (VC-210 board)

Set the frequency of the clock for synchronization. If deviated, the synchronization will be lost and the color will become inconsistent.

Subject	Not required
Measurement Point	Pin ⑫ of IC202 (CL200)
Measuring Instrument	Frequency counter
Adjustment Page	F
Adjustment Address	1C
Specified Value	f=18000000 ± 90Hz

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: F, address: 1C, change the data and set the clock frequency (f) to the specified value.
3) Press the PAUSE button of the adjustment remote commander.
4) Select page: 0, address: 01, and set data: 00.

2. HALL Adjustment

For detecting the position of the lens iris, adjust the HALL amplifier gain and offset. If deviated, iris can oscillate, or the indoor-outdoor white balance can mis-operate.

Subject	Not required
Measurement Point	DDS display data of LCD or monitor TV (Note 2)
Measuring Instrument	
Adjustment Page	F
Adjustment Address	1E, 1F, 70
Specified Value	When data of page: 6, address: 01 is 01. (Note 1) Data on display shall be: 88 to 8C. When data of page: 6, address: 01 is 03. (Note 1) Data on display shall be: 15 to 19.

Note 1: The PAUSE button of the adjustment remote commander must be pressed.

Note 2: DDS display data of LCD or TV monitor

CAM 00 0000
CAM 00 00XX
└── Object data

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 6, address: 94, and set data: 8A.
3) Select page: 6, address: 95, and set data: 17.
4) Select page: 6, address: 01, set data: 6D, and press the PAUSE button of the adjustment remote commander. (The HALL adjustment is performed and the adjustment data is stored in page: F, address: 1E, 1F and 70.)
5) Select page: 6, address: 02, and check that the data is “01”.
6) Select page: 6, address: 94, and set data: 00.
7) Select page: 6, address: 95, and set data: 00.
8) Select page: 6, address: 01, set data: 00, and press the PAUSE button of the adjustment remote commander.
9) Select page: 0, address: 01, and set data: 00.

Checking method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: D, address: 11, set data: 02, and press the PAUSE button of the adjustment remote commander.
3) Select page: 6, address: 04, and set data: 03.
4) Select page: 6, address: 01, and set data: 01, and press the PAUSE button of the adjustment remote commander.
5) Check the DDS display data (Note 2) lies within the “88” to “8C” range.
6) Select page: 6, address: 01, set data: 03, and press the PAUSE button of the adjustment remote commander.
7) Check the DDS display data lies within the “15” to “19” range.
8) Select page: 6, address: 01, set data: 00, and press the PAUSE button of the adjustment remote commander.
9) Select page: 6, address: 04, and set data: 00.
10) Select page: D, address: 11, set data: 00, and press the PAUSE button of the adjustment remote commander.
11) Select page: 0, address: 01, and set data: 00.

3. Flange Back Adjustment

The inner focus lens flange back adjustment is carried out automatically. In whichever case, the focus will be deviated during auto focusing/manual focusing.

3-1. Flange Back Adjustment (1)

Subject	Flange back adjustment chart (2.0 m from the front of the lens) (Luminance: 230 ± 30 lux)
Measurement Point	Check operation on monitor TV
Measuring Instrument	
Adjustment Page	F
Adjustment Address	24 to 29, 36 to 3D

Adjusting method:

1) Check that at both the zoom lens TELE end and WIDE end, the center of the chart for the flange back adjustment and center of the exposure screen coincide.
2) Select page: 0, address: 01, and set data: 01.
3) Check that the data of page: F, address: 24 to 29, 36 to 3D is the initial value (See table below).

Address	Data	Address	Data
24	51	37	00
25	19	38	46
26	22	39	00
27	20	3A	19
28	93	3B	00
29	13	3C	2A
36	00	3D	00

4) Select page: 6, address: 02, and check that the data is “00”.
5) Select page: 6, address: 01, set data: 13, and press the PAUSE button of the adjustment remote commander.
6) Select page: 6, address: 01, set data: 15, and press the PAUSE button of the adjustment remote commander.
(The adjustment data will be automatically input to page: F, addresses: 24 to 29, 36 to 3D.)
7) Select page: 6, address: 02, and check that the data is “01”.

Processing after Completing Adjustments:

1) Select page: 6, address: 01, set data: 00, and press the PAUSE button of the adjustment remote commander.
2) Perform “Flange Back Adjustment (2)”.

3-2. Flange Back Adjustment (2)

Perform this adjustment after performing “Flange Back Adjustment (1)”.

Subject	Subject more than 500 m away (Subjects with clear contrast such as buildings, etc.)
Adjustment Page	F
Adjustment Address	24 to 29, 36 to 3D

Adjusting method:

1) Set the zoom lens to the TELE end and expose a subject that is more than 500 m away (subject with clear contrast such as building, etc.). (Nearby subjects less than 500 m away should not be in the screen.)
2) Select page: 0, address: 01, and set data: 01.
3) Select page: 6, address: 02, and check that the data is “00”.
4) Select page: 6, address: 01, set data: 13, and press the PAUSE button of the adjustment remote commander.
5) Place a ND filter on the lens so that the optimum image is obtained.
6) Select page: 6, address: 01, set data: 29, and press the PAUSE button of the adjustment remote commander.
(The adjustment data will be automatically input to page: F, addresses: 24 to 29, 36 to 3D.)
7) Select page: 6, address: 02, and check that the data is “01”.

Processing after Completing Adjustments:

1) Select page: 6, address: 01, set data: 00, and press the PAUSE button of the adjustment remote commander.
2) Select page: 0, address: 01, and set data: 00.
3) Perform “Flange Back Check”.

4. Flange Back Check

Subject	Siemens star (2.0 m from the front of the lens) (Luminance: approx. 230 lux)
Measurement Point	Check operation on monitor TV
Measuring Instrument	(Note)
Specified Value	Focused at the TELE end and WIDE end.

Note: When the auto focus is ON, the lens can be checked if it is focused or not by observing the data on the page A of the adjustment remote commander.

1) Select page: 6, address: 04, and set data: 0F.
2) Page A shows the state of the focus.

A : 00 : XX
Odd: Focused
Even: Unfocused

Switch setting:

1) STEADY SHOT (Menu display) .... OFF
2) DIGITAL ZOOM (Menu display) .... OFF

Checking method:

1) Place the Siemens star 2.0 m from the front of the lens.
2) To open the IRIS, decrease the luminous intensity to the Siemens star up to a point before noise appear on the image.
3) Shoot the Siemens star with the zoom TELE end.
4) Turn on the auto focus.
5) Check that the lens is focused (Note).
6) Select page: 6, address: 21, and set data: 10.
7) Shoot the Siemens star with the zoom WIDE end.
8) Observe the monitor TV and check that the lens is focused.

Processing after Completing Adjustments:

1) Select page: 6, address: 21, and set data: 00.
2) Select page: 6, address: 04, and set data: 00.

5. Optical Axis Adjustment

Align the lens optical axis with the that of the CCD imager.
If deviated, center of picture can lose focus when zoom is operated from the WIDE end to the TELE end.

Subject	Siemens star
Measurement Point	Check on monitor TV
Measuring Instrument	
Adjusting Page	F
Adjusting Address	43

Switch setting:

1) DIGITAL ZOOM (Menu display) .... OFF
2) STEADY SHOT (Menu display) .... OFF

Preparations before adjustments:

1) Playback the monoscope segment of the system check tape (XH5-5 (NTSC), XH5-5P (PAL)).
2) Attach the optical axis frame chart (transparent) on monitor TV screen. Center of monoscope image and that of optical axis frame must agree.
3) Set to the camera mode.

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 6, address: 40, and set data: 02.
3) Select page: 6, address: 41, and set data: 01.
4) Select page: F, address: 43, set data: 00, and press the PAUSE button of the adjustment remote commander.
5) Place the Siemens star 2.0 m away from the front of the lens.
6) Shoot the Siemens star with the zoom TELE end.
7) Point the lens toward the Siemens start chart until center of the Siemens star is located in the center of the optical axis frame.
8) Shoot the Siemens star with the zoom WIDE end.
9) Measure on monitor in which area of the optical axis frame the center of the Siemens star is located. Measure the amount of displacement (distance between the center of the Siemens star and the center of the optical axis frame). The measurement value is named L1.
10) Read the correction data corresponding to the area from the following table.

Area	Display phase	Correction data
1	22.6˚ to 67.5˚	01
2	67.6˚ to 112.5˚	02
3	112.6˚ to 157.5˚	03
4	157.6˚ to 202.5˚	04
5	202.6˚ to 247.5˚	05
6	247.6˚ to 292.5˚	06
7	292.6˚ to 337.5˚	07
8	337.6˚ to 22.5˚	08

11) Set the correction data to page: F, address: 43 and press the PAUSE button.
12) Shoot the Siemens star with the zoom TELE end.
13) Point the lens toward the Siemens start chart until center of the Siemens star is located in the center of the optical axis frame.
14) Shoot the Siemens star with the zoom WIDE end.
15) Measure the amount of displacement (distance between the center of the Siemens star and the center of the optical axis frame). The measurement value is named L2.
16) Compare the values L1 and L2, and confirm that L2 is smaller than L1. If L2 is larger than L1, select page: F, address: 43 and set data: 00, and press the PAUSE button.

Processing after Completing Adjustments:

1) Select page: 0, address: 01, and set data: 00.
2) Select page: 6, address: 40, and set data: 00.
3) Select page: 6, address: 41, and set data: 00.

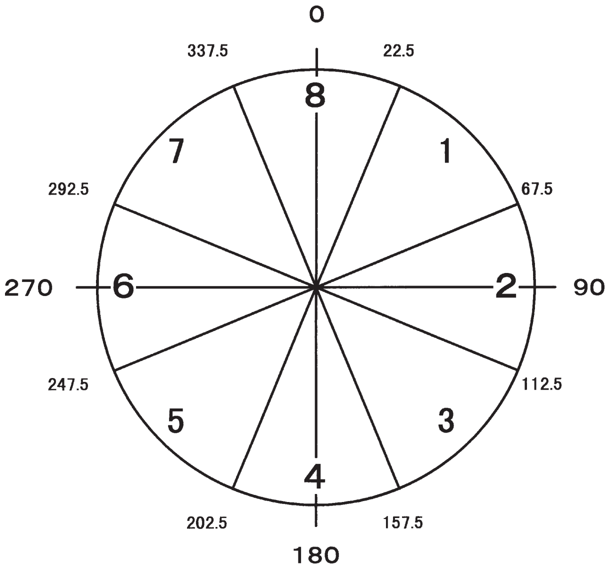


Fig. 5-1-6

6. Picture Frame Setting

Subject	Color bar chart standard picture frame (1.5 m from the front of the lens)
Measurement Point	Video output terminal
Measuring Instrument	Oscilloscope and monitor TV
Specified Value	A=B, C=D, t=0 ± 0.1msec

Setting method:

1) Adjust the zoom and the camera direction, and set to the specified position.
2) Mark the position of the picture frame on the monitor display, and adjust the picture frame to this position in following adjustments using “Color bar chart standard picture frame”.

Check on the oscilloscope

1. Horizontal period

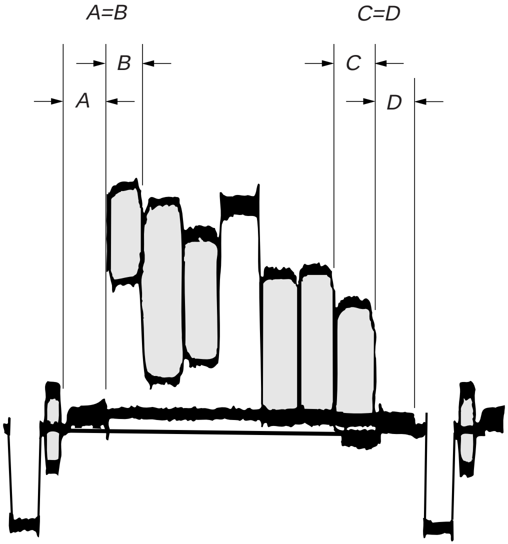


Fig. 5-1-7

2. Vertical period

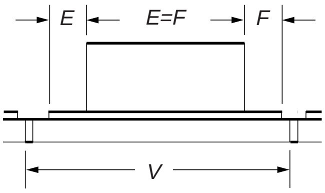


Fig. 5-1-8

Check on the monitor TV (Underscanned mode)

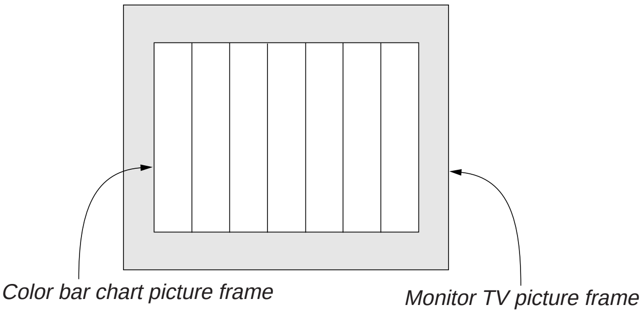


Fig. 5-1-9

7. AGC Gain Calibration Adjustment

Subject	Clear chart (Color bar chart standard picture frame)
Measurement Point	DDS display of LCD or monitor TV
Measuring Instrument	
Adjusting Page	E
Adjusting Address	3A, 3B, 3C, 3D

Switch setting:

1) STEADY ZOOM (Menu display) .... OFF

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: F, address: 6E, and set data: 08.
3) Select page: 6, address: 01, set data: 71, and press the PAUSE button of the adjustment remote commander.
   (The AGC GAIN calibration adjustment is performed and the adjustment data is automatically stored in page: E, address: 3A to 3D.)
4) The adjustment is complete when the data of page: 6, address 02 is “01”.

Processing after Completing Adjustments:

1) Select page: F, address: 6E, set data: FF, and press the PAUSE button of the adjustment remote commander.
2) Select page: 6, address: 01, set data: 00, and press the PAUSE button of the adjustment remote commander.
3) Select page: 0, address: 01, and set data: 00.

8. Color Reproduction Adjustment

Adjust the color Separation matrix coefficient so that proper color reproduction is produced.

Subject	Color bar chart standard picture frame
Measurement Point	Video output terminal
Measuring Instrument	Vectorscope
Adjustment Page	F
Adjustment Address	2E, 30, 44, 45
Specified Value	All color luminance points should settle within each color reproduction frame

Adjusting method:

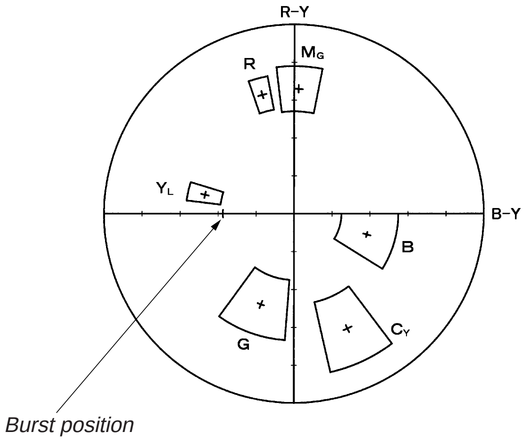
1) Select page: 0, address: 01, and set data: 01.
2) Select page: 6, address: 01, set data: 3D, and press the PAUSE button of the adjustment remote commander.
3) Select page: F, address: 16, set data: 37, and press the PAUSE button of the adjustment remote commander.
4) Adjust the GAIN and PHASE of the vectorscope, and adjust the burst luminance point to the burst position of the color reproduction frame.
5) Select page: F, address: 5E, and set data: 29.
6) Change the data of page: F, address: 2E, 30, 44 and 45, and settle each color luminance point in each color reproduction frame.

   Note: Be sure to press the PAUSE button of the adjustment remote commander before changing the addresses. If not, the new data will not be written to the memory.
7) Press the PAUSE button of the adjustment remote commander.

Processing after Completing Adjustments:

1) Select page: F, address: 5E, and set data: 2E, and press the PAUSE button of the adjustment remote commander.
2) Select page: 6, address: 01, and set data: 00, and press the PAUSE button of the adjustment remote commander.
3) Select page: 0, address: 01, and set data: 00.

For NTSC model



For PAL model

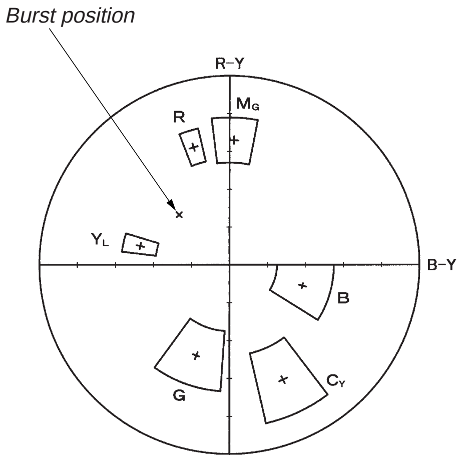


Fig. 5-1-10

9. MAX GAIN Adjustment

Setting the minimum illumination.
If it is not consistent, the image level required for taking subjects in low illuminance will not be produced (dark).

Subject	Clear chart (Color bar chart standard picture frame)
Measurement Point	DDS display of LCD or monitor TV (Note)
Measuring Instrument	
Adjustment Page	F
Adjustment Address	2C
Specified Value	78 to 88

Note: The right two digits of the display data of the LCD or monitor TV is the object data. If the data change so swiftly that it cannot be read out, record the data on a tape once and play the tape back in the frame still mode and obtain the average data.

CAM 00 0000
CAM 00 00XX
└── Object data

Switch setting:

1) STEADY SHOT (Menu display) .... OFF

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: D, address: 11, and set data: 02, and press the PAUSE button of the adjustment remote commander.
3) Select page: 6, address: 04, and set data: 01.
4) Select page: 6, address: 40, and set data: 02.
5) Select page: 6, address: 10, and set data: 02.
6) Select page: 6, address: 01, set data: 19 and press the PAUSE button of the adjustment remote commander.
7) Select page: F, address: 2C, change the data and adjust the DDS display data to the specified value. (Note)
8) Press the PAUSE button of the adjustment remote commander.

Processing after Completing Adjustments:

1) Select page: D, address: 11, set data: 00, and press the PAUSE button of the adjustment remote commander.
2) Select page: 0, address: 01, and set data: 00.
3) Select page: 6, address: 01, and set data: 00, and press the PAUSE button of the adjustment remote commander.
4) Select page: 6, address: 04, and set data: 00.
5) Select page: 6, address: 40, and set data: 00.
6) Select page: 6, address: 10, and set data: 00.

10. Auto White Balance & LV Standard Data Input

Subject	Clear chart (Color bar chart standard picture frame)
Adjustment Page	F
Adjustment Address	20 to 23, 3E, 3F

Note 1: Perform "Color Reproduction Adjustment" before this adjustment.
Note 2: Check that the data of page: 6, address: 02 is 00. (If the data is "01", turn the power of the unit OFF/ON.)

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Wait for two seconds.
3) Select page: 6, address: 01, set data: 11, and press the PAUSE button of the adjustment remote commander.
4) Select page: 6, address: 01, set data: 0D, and press the PAUSE button of the adjustment remote commander.
(When the standard data is take in, the data will be automatically input to address: 20 to 23, 3E, 3F.)
5) Select page: 6, address: 02, and check that the data is "01".
6) Perform "Auto White Balance Adjustment".

Processing after Completing Adjustments:

1) Select page: 6, address: 01, set data: 00, and press the PAUSE button of the adjustment remote commander.
2) Select page: 0, address: 01, and set data: 00.

11. Auto White Balance Adjustment

Adjust to the proper auto white balance output data.
If it is not correct, auto white balance and color reproducibility will be poor.

Subject	Clear chart (Color bar chart standard picture frame)
Filter	Filter C14 for color temperature correction
Measurement Point	DDS display of LCD or monitor TV
Measuring Instrument	(Note 2)
Adjustment Page	F
Adjustment Address	34, 35
Specified Value	R ratio: 2C40 to 2CC0 B ratio: 5D40 to 5DC0

Note 1: Perform "Auto White Balance & LV Standard Data Input" before this adjustment.

Note 2: The right four digits of the display data of the LCD or monitor TV is the object data.

CAM 00 0 0 0 0
CAM 00 XXXX
Object data

Adjusting method:

1) Place the C14 filter for color temperature correction on the lens.
2) Select page: 0, address: 01, and set data: 01.
3) Select page: D, address: 11, and set data: 02, and press the PAUSE button of the adjustment remote commander.
4) Select page: 6, address: 01, set data: 3F, and press the PAUSE button of the adjustment remote commander.
5) Select page: 6, address: 04, and set data: 04.
6) Select page: F, address: 34, change the data and adjust the average value of the DDS display data (Note 2) to the R ratio specified value.
7) Press the PAUSE button of the adjustment remote commander.
8) Select page: 6, address: 04, and set data: 05.
9) Select page: F, address: 35, change the data and adjust the average value of the DDS display data to the B ratio specified value.
10) Press the PAUSE button of the adjustment remote commander.

Processing after Completing Adjustments:

1) Select page: D, address: 11, set data: 00, and press the PAUSE button of the adjustment remote commander.
2) Select page: 0, address: 01, and set data: 00.
3) Select page: 6, address: 01, and set data: 00, and press the PAUSE button of the adjustment remote commander.
4) Select page: 6, address: 04, and set data: 00.

12. White Balance Check

Subject	Clear chart (Color bar chart standard picture frame)
Filter	Filter C14 for color temperature correction ND filter 1.0 and 0.3
Measurement Point	Video output terminal
Measuring Instrument	Vectorscope
Specified Value	Fig. 5-1-11. (A) to (C)

Checking method:

1) Check that the lens is not covered with either filter.
2) Select page: 6, address: 01, set data: 0F, and press the PAUSE button of the adjustment remote commander.
3) Check that the center of the white luminance point is within the circle shown Fig. 5-1-11 (A).
4) Select page: 6, address: 01, set data: 23, and press the PAUSE button of the adjustment remote commander.
5) Place the C14 filter on the lens.
6) Check that the center of the white luminance point settles in the circle shown Fig. 5-1-11 (B).
7) Remove the C14 filter, and place the ND filter 1.3 (1.0 + 0.3) on the lens.
8) Check that the white luminance point stopped moving, and then remove the ND filter 1.3.
9) Check that the center of the white luminance point settles within the circle shown Fig. 5-1-11 (C).

Processing after Completing Adjustments:

1) Select page: 6, address: 01, set data: 00, and press the PAUSE button of the adjustment remote commander.

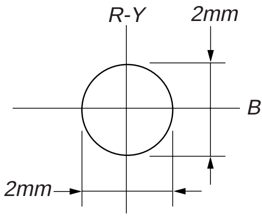


Fig. 5-1-11 (A)

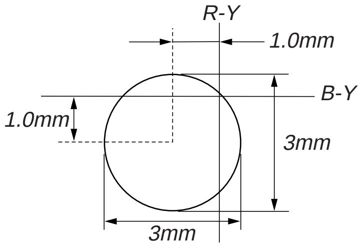


Fig. 5-1-11 (B)

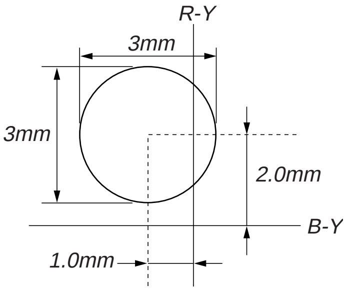


Fig. 5-1-11 (C)

13. Angular Velocity Sensor Sensitivity Adjustment

- This adjustment is performed only when replacing the angular velocity sensor.
  Although this adjustment need not be performed when the circuit is damaged, etc., check the operations.
- Note down the sensitivity displayed on the angular velocity sensor of the repair parts. At this time, note down also to which board it was attached to.
  Be sure to check because if attached incorrectly, the screen will vibrate up and down or left and right during hand-shake correction operations.

Precautions on the Parts Replacement

There are two types of repair parts.

Type A	ENC03JA or ENC03GA
Type B	ENC03JB or ENC03GB

Replace the broken sensor with a same type sensor. If replace with other type parts, the image will vibrate up and down or left and right during hand-shake correction operations. After replacing, re-adjust according to the adjusting method.

Precautions on Angular Velocity Sensor

The sensor incorporates a precision oscillator. Handle it with care as if it dropped, the balance of the oscillator will be disrupted and operations will not be performed properly.

Adjustment Page	F
Adjustment Address	41, 42

Note: The sensor sensitivity of SE450 and SE451 of the CD-203 board is written only on the repair parts.

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Read the sensor sensitivity written on SE451 of the CD-203 board, and take this as S_{451}.
3) Read the sensor sensitivity written on SE450 of the CD-203 board, and take this as S_{450}.
4) Calculate D_{41}' and D_{42}' using the following equation (decimal calculation).
   NTSC model : $D_{41}' = 90/S_{451}$
   $D_{42}' = 94/S_{450}$
   PAL model : $D_{41}' = 107/S_{451}$
   $D_{42}' = 109/S_{450}$
5) Convert D_{41}' and D_{42}' into hexadecimal digits, to obtain D_{41} and D_{42}. (Round off decimal points)
6) Select page: F, address: 41, set data: D_{41}, and press the PAUSE button of the adjustment remote commander.
7) Select page: F, address: 42, set data: D_{42}, and press the PAUSE button of the adjustment remote commander.

Processing after Completing Adjustments:

1) Select page: 0, address: 01, and set data: 00.
2) Check that the steady shot operations have been performed normally.

1-4. COLOR ELECTRONIC VIEWFINDER SYSTEM ADJUSTMENT

Note 1: When replacing the LCD unit, be careful to prevent damages caused by static electricity.

Note 2: Switch setting
EVF ON/OFF (VC-125 board S5500)
....ON (when the EVF is pulled out)
PANEL OPEN/CLOSE (VC-210 board S2201)
....CLOSE (Press the switch)
VF BRIGHT (Menu display)...center

[Adjusting connector]

Most of the measuring points for adjusting the LCD are concentrated in CN2904 of the VC-210 board.
Connect the measuring instruments via the CPC-6 flexible jig (J-6082-370-A) and CPC-6 terminal board jig (J-6082-371-A). The following table shows the pin numbers and signal name of CN2904.

Pin No.	Signal Name	Pin No.	Signal Name
1	LACN SIG	2	EVF BL+
3	EVF BL–	4	EVF VG
5	EVF VCO	6	GND
7	C1 EP	8	DATA VALID
9	GND	10	GND
11	GND	12	TMS
13	TCK	14	TDI
15	TDO	16	GND
17	SWP	18	RF IN/LANC JACK IN
19	GND	20	RF MON

1. VCO Adjustment (VC-210 board)

Set the VCO free-run frequency. If deviated, the LCD display will be blurred.

Mode	VTR stop
Signal	No signal
Measurement Point	Pin ⑤ of CN2904 (EVF VCO)
Measuring Instrument	Oscilloscope (DC range)
Adjustment Page	D
Adjustment Address	75
Specified Value	$A = 1.75^{+0.45}_{-0.35}$ V

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 3, address: 0C, set data: 20, and press the PAUSE button of the adjustment remote commander.
3) Select page: 3, address: 22, set data: 02, and press the PAUSE button of the adjustment remote commander.
4) Check the GND level of the oscilloscope.
5) Select page: D, address: 75, change the data and set the VCO output voltage (A) to the specified value.
6) Press the PAUSE button of the adjustment remote commander.
7) Select page: 3, address: 22, set data: 00, and press the PAUSE button of the adjustment remote commander.
8) Select page: 3, address: 0C, set data: 00, and press the PAUSE button of the adjustment remote commander.
9) Select page: 0, address: 01, and set data: 00.

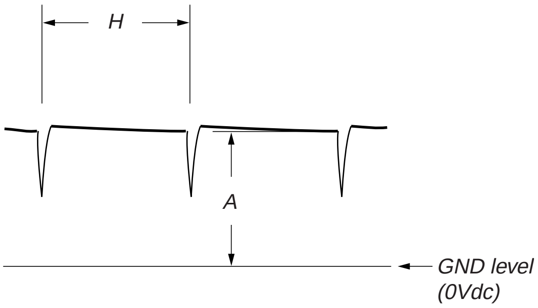


Fig. 5-1-12

2. Bright Adjustment (VC-210 board)

Set the level of the VIDEO signal for driving the LCD to the specified value. If deviated, the screen image will lose sharpness, or will be blackish or saturated (whitish).

Mode	Camera
Subject	Arbitrary
Measurement Point	Pin ④ of CN2904 (EVF VG)
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	7A
Specified Value	A = 7.2 ± 0.05V

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 3, address: 0C, set data: 20, and press the PAUSE button of the adjustment remote commander.
3) Select page: 3, address: 22, set data: 02, and press the PAUSE button of the adjustment remote commander.
4) Select page: D, address: 7A, change the data and set the voltage (A) between the reversed waveform pedestal and non-reversed waveform pedestal to the specified value.
5) Press the PAUSE button of the adjustment remote commander.
6) Select page: 3, address: 22, set data: 00, and press the PAUSE button of the adjustment remote commander.
7) Select page: 3, address: 0C, set data: 00, and press the PAUSE button of the adjustment remote commander.
8) Select page: 0, address: 01, and set data: 00.

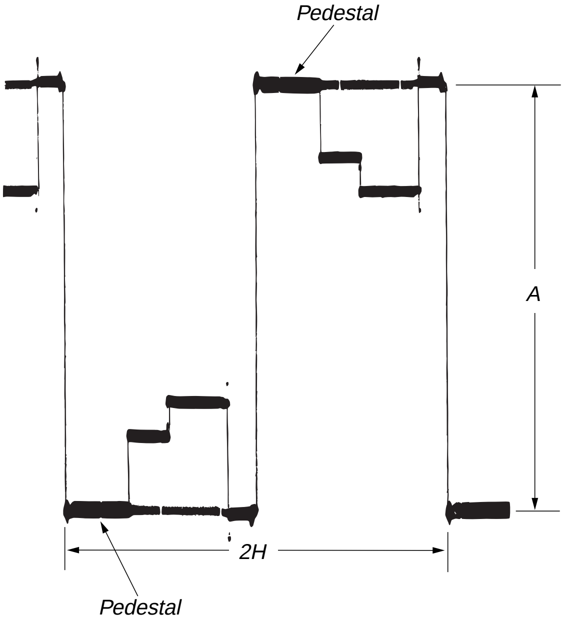


Fig. 5-1-13

3. Contrast Adjustment (VC-210 board)

Set the level of the VIDEO signal for driving the LCD to the specified value. If deviated, the screen image will lose sharpness, or will be blackish or saturated (whitish).

Mode	Camera
Subject	Arbitrary
Measurement Point	Pin ④ of CN2904 (EVF VG)
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	7B
Specified Value	A = 1.85 ± 0.05V

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 3, address: 0C, set data: 20, and press the PAUSE button of the adjustment remote commander.
3) Select page: 3, address: 22, set data: 02, and press the PAUSE button of the adjustment remote commander.
4) Select page: D, address: 7B, change the data and set the voltage (A) between the 3-step peak and pedestal to the specified value.
5) Press the PAUSE button of the adjustment remote commander.
6) Select page: 3, address: 22, set data: 00, and press the PAUSE button of the adjustment remote commander.
7) Select page: 3, address: 0C, set data: 00, and press the PAUSE button of the adjustment remote commander.
8) Select page: 0, address: 01, and set data: 00.

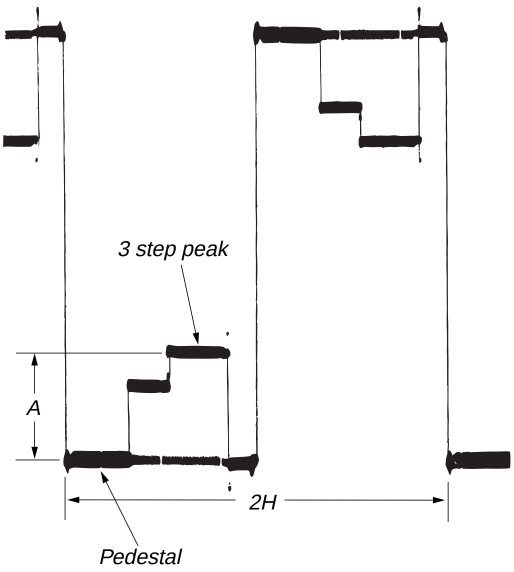


Fig. 5-1-14

4. White Balance Adjustment (VC-210 board)

Correct the white balance.

If deviated, the reproduction of the EVF screen may degenerate.

Mode	Camera
Subject	Arbitrary
Measurement Point	Check on EVF screen
Measuring Instrument	
Adjustment Page	D
Adjustment Address	71, 72
Specified Value	The EVF screen should not be colored

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 3, address: 0C, set data: 20, and press the PAUSE button of the adjustment remote commander.
3) Select page: 3, address: 22, set data: 0B, and press the PAUSE button of the adjustment remote commander.
4) Select page: D, address: 71 and 72, set the data to the initial value.

   Note: To write in the non-volatile memory (EEPROM), Press the PAUSE button of the adjustment remote commander each time to set the data.

Address	Data
71	80
72	80

5) Check that the EVF screen is not colored. If colored, change the data of page: D, address: 71 and 72 so that the EVF screen is not colored.

   Note: To write in the non-volatile memory (EEPROM), press the PAUSE button of the adjustment remote commander each time to set the data.
6) Select page: 3, address: 22, set data: 00, and press the PAUSE button of the adjustment remote commander.
7) Select page: 3, address: 0C, set data: 00, and press the PAUSE button of the adjustment remote commander.
8) Select page: 0, address: 01, and set data: 00.

1-5. LCD SYSTEM ADJUSTMENT

Note 1: The back light (fluorescent tube) is driven by a high voltage AC power supply. Therefore, do not touch the back light holder to avoid electrical shock.

Note 2: When replacing the LCD unit, be careful to prevent damages caused by static electricity.

Note 3: Adjust the LCD BRIGHT button to its center of adjustment range.

Note 4: Set the LCD COLOR to its center of adjustment range from the menu display.

[Adjusting connector]

Most of the measuring points for adjusting the LCD display are concentrated in CN8201 of the PD-102 board.

The following table shows the pin numbers and signal name of CN8201.

Pin No.	Signal Name
1	VG
2	COM
3	GND
4	PSIG
5	VCO CENT

1. VCO Adjustment (PD-102 board)

Set the VCO free-run frequency. If deviated, the LCD display will be blurred.

Mode	VTR stop
Signal	No signal
Measuring Point	Pin ⑤ of CN8201 (VCO CENT)
Measuring Instrument	Oscilloscope (DC range)
Adjustment Page	D
Adjustment Address	84
Specified Value	A=1.80 ± 0.10V

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Check the GND level of the oscilloscope.
3) Select page: D, address: 84, change the data and set the PCO output voltage (A) to the specified value.
4) Press the PAUSE button of the adjustment remote commander.
5) Select page: 00, address: 01, and set data: 00.

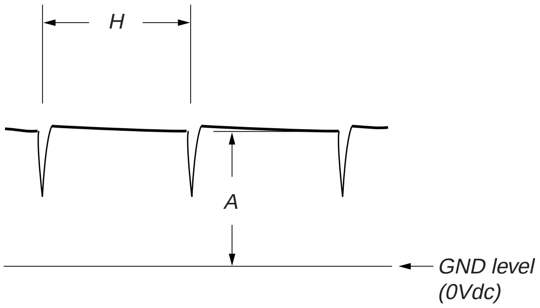


Fig. 5-1-15

2. Black Limit Adjustment (PD-102 board)

Set the dynamic range of the LCD driver to an appropriate level. If deviated, the LCD image will be blackish or saturated (whitish).

Mode	VTR stop
Signal	No signal
Measuring Point	Pin ④ of CN8201 (PSIG)
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	82
Specified Value	A=8.00 ± 0.05V

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: D, address: 82, change the data until the PSIG signal amplitude (A) satisfies the specified value.
3) Press the PAUSE button of the adjustment remote commander.
4) Select page: 0, address: 01, and set data: 00.

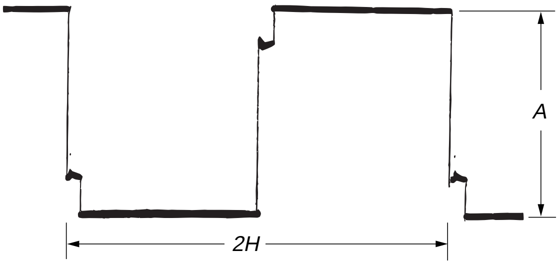


Fig. 5-1-16

3. Bright Adjustment (PD-102 board)

Set the VIDEO signal level to an appropriate level for driving the LCD. If deviated, the LCD image will be blackish or saturated (whitish).

Mode	Camera
Subject	Arbitrary
Measuring Point	Pin ① of CN8201 (VG)
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	8A
Specified Value	A=7.40 ± 0.05V

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 3, address: 0C, set data: 20, and press the PAUSE button of the adjustment remote commander.
3) Select page: 3, address: 22, set data: 08, and press the PAUSE button of the adjustment remote commander.
4) Select page: D, address: 8A, change the data and set the voltage (A) between the inverted waveform's pedestal and non-reversed waveform's pedestal to the specified value.
5) Press the PAUSE button of the adjustment remote commander.
6) Select page: 3, address: 22, set data: 00, and press the PAUSE button of the adjustment remote commander.
7) Select page: 3, address: 0C, set data: 00, and press the PAUSE button of the adjustment remote commander.
8) Select page: 0, address: 01, and set data: 00.

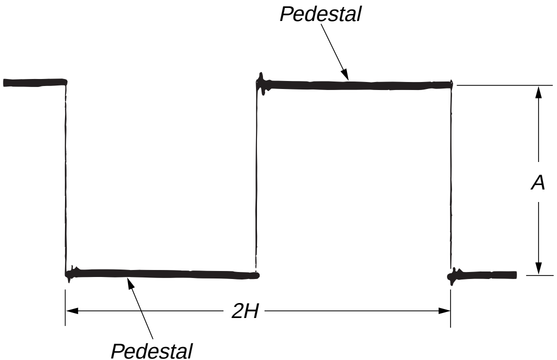


FIg. 5-1-17

4. Gamma-1 Adjustment (PD-102 board)

Set the VIDEO signal level to an appropriate level for driving the LCD to the specified value. If deviated, the LCD image will be blackish or saturated (whitish).

Mode	Camera
Subject	Arbitrary
Measuring Point	Pin ① of CN8201 (VG)
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	83
Specified Value	A=1.60 ± 0.05V

Note: This (gamma-1) adjustment and the “5. Contrast Adjustment” must be repeated alternately until both specifications are satisfied simultaneously (called tracking adjustment).

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 3, address: 0C, set data: 20, and press the PAUSE button of the adjustment remote commander.
3) Select page: 3, address: 22, set data: 02, and press the PAUSE button of the adjustment remote commander.
4) Select page: 2, address: 0E, and set data: 40.
5) Select page: D, address: 83 change the data and set the voltage (A) between the gamma-1 limiter level and pedestal (0 IRE) to the specified value.
6) Press the PAUSE button of the adjustment remote commander.
7) Select page: 2, address: 0E, and set data: 00.
8) Select page: 3, address: 22, set data: 00, and press the PAUSE button of the adjustment remote commander.
9) Select page: 3, address: 0C, set data: 00, and press the PAUSE button of the adjustment remote commander.
10) Select page: 0, address: 01, set data: 00.
11) Perform “5. Contrast Adjustment”.

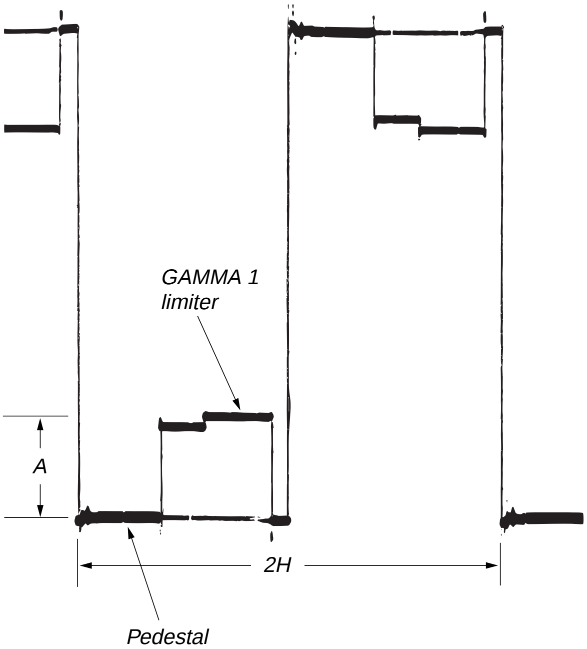


Fig. 5-1-18

5. Contrast Adjustment (PD-102 board)

Set the VIDEO signal level to an appropriate level for driving the LCD to the specified value. If deviated, the screen image will be blackish or saturated (whitish).

Mode	Camera
Subject	Arbitrary
Measuring Point	Pin ① of CN8201 (VG)
Measuring Instrument	Oscilloscope
Adjusting Page	D
Adjusting Address	8C
Specified Value	A=2.43 ± 0.05V

Note: This (contrast) adjustment and the "4. Gamma-1 Adjustment" must be repeated alternately until both specifications are satisfied simultaneously (called tracking adjustment).

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 3, address: 0C, set data: 20, and press the PAUSE button of the adjustment remote commander.
3) Select page: 3, address: 22, set data: 01, and press the PAUSE button of the adjustment remote commander.
4) Select page: D, address: 8C, change the data and set the voltage (A) between 90 IRE and pedestal (0 IRE) to the specified value.
5) Press the PAUSE button of the adjustment remote commander.
6) Select page: 3, address: 22, set data: 00, and press the PAUSE button of the adjustment remote commander.
7) Select page: 3, address: 0C, set data: 00, and press the PAUSE button of the adjustment remote commander.
8) Select page: 0, address: 01, and set data: 00.
9) Check that the specified value of the “4. Gamma-1 Adjustment” is satisfied at this time. If it is found that the specified value is not satisfied, perform “4. Gamma-1 Adjustment” again, then perform “5. Contrast Adjustment” once again.

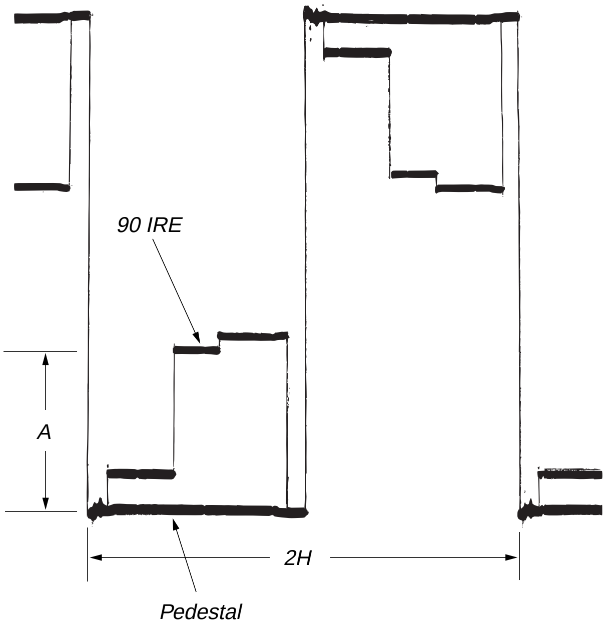


Fig 5-1-19

6. Center Level Adjustment (PD-102 board)

Set the VIDEO signal center level of the LCD panel to an appropriate value.

Mode	Camera
Subject	Arbitrary
Measuring Point	Pin ① of CN8201 (VG)
Measuring Instrument	Digital voltmeter
Adjusting Page	D
Adjusting Address	85
Specified Value	A=6.50 ± 0.10 Vdc

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 3, address: 0C, set data: 20, and press the PAUSE button of the adjustment remote commander.
3) Select page: 3, address: 22, set data: 08, and press the PAUSE button of the adjustment remote commander.
4) Select page: D, address: 85, change the data until the DC voltage (A) of VG signal is set to the specified value.
5) Press the PAUSE button of the adjustment remote commander.
6) Select page: 3, address: 22, set data: 00, and press the PAUSE button of the adjustment remote commander.
7) Select page: 3, address: 0C, set data: 00, and press the PAUSE button of the adjustment remote commander.
8) Select page: 0, address: 01, and set data: 00.

7. White Balance Adjustment (PD-102 board)

Correct the white balance.

If deviated, the LCD display color cannot be reproduced.

Mode	Camera
Subject	Arbitrary
Measurement Point	Check on LCD display
Measuring Instrument	
Adjustment Page	D
Adjustment Address	80, 81
Specified Value	The LCD display should not be colored

Note: Check the white balance only when replacing the following parts. If necessary, adjust them.

1. LCD panel
2. Light induction plate
3. IC8001

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 3, address: 0C, set data: 20, and press the PAUSE button of the adjustment remote commander.
3) Select page: 3, address: 22, set data: 0B, and press the PAUSE button of the adjustment remote commander.
4) Select page: D, address: 80 and 81, and set the data to the initial value.

   Note: To write in the non-volatile memory (EEPROM), press the PAUSE button of the adjustment remote commander each time to set the data.

Address	Data
80	90
81	8E

5) Check that the LCD display is not colored. If colored, change the data of page: D, address: 80 and 81 so that the LCD display is not colored.

   Note: To write in the non-volatile memory (EEPROM), press the PAUSE button of the adjustment remote commander each time to set the data.
6) Select page: 3, address: 22, set data: 00, and press the PAUSE button of the adjustment remote commander.
7) Select page: 3, address: 0C, set data: 00, and press the PAUSE button of the adjustment remote commander.
8) Select page: 0, address: 01, and set data: 00.

5-2. MECHANISM SECTION ADJUSTMENT

On the mechanism section adjustment

For details of mechanism section adjustments, checks, and replacement of mechanism parts, refer to the separate volume "DV MECHANICAL ADJUSTMENT MANUAL Ⅰ D Mechanism " and "MECHANICAL ADJUSTMENT MANUAL Ⅲ D200 Mechanism ".

2-1. HOW TO ENTER RECORD MODE WITHOUT CASSETTE

1) Connect the adjustment remote commander to the LANC jack.
2) Turn the HOLD switch of the adjustment remote commander to the ON position.
3) Close the cassette compartment without the cassette.
4) Select page: 3, address: 01, set data: 0C, and press the PAUSE button of the adjustment remote commander.
   (The mechanism enters the record mode automatically.)
   Note: The function buttons become inoperable.
5) To quit the record mode, select page: 3, address: 01, set data: 00, and press the PAUSE button of the adjustment remote commander. (Whenever you want to quit the record mode, be sure to quit following this procedure.)

2-2. HOW TO ENTER PLAYBACK MODE WITHOUT CASSETTE

1) Connect the adjustment remote commander to the LANC jack.
2) Turn the HOLD switch of the adjustment remote commander to the ON position.
3) Close the cassette compartment without the cassette.
4) Select page: 3, address: 01, set data: 0B, and press the PAUSE button of the adjustment remote commander.
   (The mechanism enters the playback mode automatically.)
   Note: The function buttons become inoperable.
5) To quit the playback mode, select page: 3, address: 01, set data: 00, and press the PAUSE button of the adjustment remote commander. (Whenever you want to quit the playback mode, be sure to quit following this procedure.)

2-3. TAPE PATH ADJUSTMENT

1. Preparation for Adjustment

1) Clean the tape running side (tape guide, drum, capstan shaft, pinch roller, etc.).
2) Connect the adjustment remote commander to the LANC jack.
3) Turn the HOLD switch of the adjustment remote commander to the ON position.
4) Connect an oscilloscope to VC-210 board CN2904 via the CPC-6 flexible jig (J-6082-370-A) and CPC-6 terminal board jig (J-6082-371-A).
   Channel 1: VC-210 board, CN2904 Pin ⑳ (Note)
   External trigger: VC-210 board, CN2904 Pin ⑰
   Note: Connect a 75 Ω resistor between pins ⑳ of CN2904 and ⑲ (GND).
   75 Ω resistor (Parts code: 1-247-804-11)
5) Playback the alignment tape for tracking. (XH2-1)
6) Select page: 3, address: 33, and set data: 08.
7) Select page: 3, address: 26, and set data: 31.
8) Check that the oscilloscope RF waveform is flat at the entrance and exit.
   If not flat, adjust according to the separate volume "DV MECHANICAL ADJUSTMENT MANUAL Ⅰ D Mechanism " and " MECHANICAL ADJUSTMENT MANUAL Ⅲ D200 Mechanism ".

CN2904 of VC-210 board

Pin No.	Signal Name	Pin No.	Signal Name
1	LACN SIG	2	EVF BL+
3	EVF BL–	4	EVF VG
5	EVF VCO	6	GND
7	C1 EP	8	DATA VALID
9	GND	10	GND
11	GND	12	TMS
13	TCK	14	TDI
15	TDO	16	GND
17	SWP	18	RF IN/LANC JACK IN
19	GND	20	RF MON

2. Procedure after Operations

1) Connect the adjustment remote commander to the LANC jack and set the HOLD switch to the ON position.
2) Select page: 3, address: 26, and set data: 00.
3) Select page: 3, address: 33, and set data: 00.

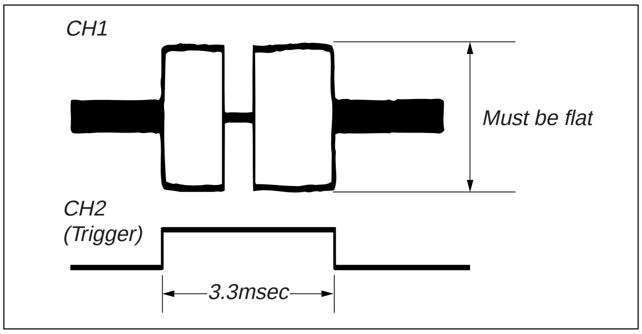


Fig. 5-2-1

5-3. VIDEO SECTION ADJUSTMENTS

When performing adjustments, refer to the layout diagrams for adjustment related parts beginning from page 5-46.

NTSC model : DCR-PC1
PAL model : DCR-PC1E

3-1. PREPARATION BEFORE ADJUSTMENTS

Use the following measuring instruments for video section adjustments.

3-1-1. Equipment Required

1) Monitor TV
2) Oscilloscope (dual-phenomenon, band above 30 MHz with delay mode) (Unless specified otherwise, use a 10 : 1 probe.)
3) Frequency counter
4) Digital voltmeter
5) Audio generator
6) Audio level meter
7) Audio distortion meter
8) Audio attenuator
9) Regulated power supply
10) Alignment tapes
    - Tracking standard (XH2-1)
      Parts code: 8-967-997-01
    - SW/OL standard (XH2-3)
      Parts code: 8-967-997-11
    - Audio operation check for NTSC (XH5-3)
      Parts code: 8-967-997-51
    - System operation check for NTSC (XH5-5)
      Parts code: 8-967-997-61
    - BIST check for NTSC (XH5-6)
      Parts code: 8-967-997-71
    - Audio operation check for PAL (XH5-3P)
      Parts code: 8-967-997-55
    - System operation check for PAL (XH5-5P)
      Parts code: 8-967-997-66
    - BIST check for PAL (XH5-6P)
      Parts code: 8-967-997-76
11) Adjustment remote commander (J-6082-053-B)
12) CPC-6 flexible jig (J-6082-370-A)
13) CPC-6 terminal board jig (J-6082-371-A)
14) Extension cable (18P, 0.5 mm)
    - For extension of the capstan motor MR-40 board (CN2501)
      Parts code: J-6082-374-A

3-1-2. Precaution on Adjusting

1) The adjustment of this unit are performed in the VTR mode or camera mode.
   To enter the VTR mode, set the power switch to "VTR" (or "PLAYER") or establish the "Forced VTR Power ON" mode using the adjustment remote commander (Note 1).
   To enter the Camera mode, set the power switch to "CAMERA" or establish the "Forced Camera Power ON" mode using the adjustment remote commander (Note 2).
   After completing adjustments, be sure to exit the "Forced VTR Power ON" mode or "Forced Camera Power ON" mode. (Note 3)
2) As the power supply of this machine, use the AC adapter that is unique to this machine. If the power is supplied from an external regulated power supply (4.2 V dc) to the BATTERY terminal of this machine, the power of this machine will be turned off and the machine is no longer operable in about 10 seconds after the power is turned on. To use an external regulated power supply, connect the adjustment remote commander and set its HOLD switch to the ADJ (ON) position.
3) As removing the MR-40 board CN2507 (2P, 1.0 mm), means removing the lithium 3 V power supply, data such as date, time, user-set menus will be lost. After completing adjustments, reset these data. If the MR-40 board CN2507 has been removed, the self-diagnosis data, data on history of use (total drum rotation hours, the initial date of power-on by user and the last date of dew condensation) will be lost. Before removing the MR-40 board CN2507, note down the self-diagnosis data and the data on history use (data of page: 2, address: A2 through AA). (Refer to "SELF-DIAGNOSIS FUNCTION" for the self-diagnosis data, and to "5-4. Service Mode" for the data on the history use.)
4) The cabinet (R) (Operation switch block: ME4780, LCD block and speaker) needs to be connected during menu operations and the battery-end adjustment. To remove the cabinet (R), disconnect the following connectors.
   1. VC-210 board CN2202 (6P, 0.5 mm) (ME4780)
   2. DD-111 board CN9900 (2P, 1.0 mm) (Speaker)
   3. VC-210 board CN2201 (2P, 1.0 mm) (LCD block)
   4. VC-210 board CN2906 (14P, 1.0 mm) (LCD block)
5) The cabinet (L) (Operation switch block: FK4780, lens block, EVF block, microphone unit) need not be connected during adjustment if the "Forced VTR Power ON" mode is set. To remove the cabinet (L), disconnect the following connectors.
   1. VC-210 board CN2910 (20P, 0.5 mm) (FK4780)
   2. VC-210 board CN201 (50P, 0.5 mm) (Lens block)
   3. VC-210 board CN5000 (20P, 0.5 mm) (EVF block)
   4. VC-210 board CN2001 (4P, 1.0 mm) (Microphone)
6) Use the following extension cable to open the MR-40 board.
   J-6082-374-A (18P, 0.5 mm)

Note 1: Setting the "Forced VTR Power ON" mode (VTR mode)
   1) Select page: 0, address: 01, and set data: 01.
   2) Select page: D, address: 10, set data :02, and press the PAUSE button of the adjustment remote commander.
      The above procedure will enable the camera power to be turned on with cabinet (L) (Operation switch block: FK4780) removed.
      After completing adjustments, be sure to exit "Forced Power ON" mode.

Note 2: Setting the "Forced Camera Power ON" mode (Camera mode)
   1) Select page: 0, address: 01, and set data: 01.
   2) Select page: D, address: 10, set data :01, and press the PAUSE button of the adjustment remote commander.
      The above procedure will enable the camera power to be turned on with cabinet (L) (Operation switch block: FK4780) removed.
      After completing adjustments, be sure to exit "Forced Power ON" mode.

Note 3: Exiting the "Forced Power ON" mode
   1) Select page: 0, address: 01, and set data :01.
   2) Select page: D, address: 10, set data :00, and press the PAUSE button of the adjustment remote commander.
   3) Select page: 0, address: 01, and set data: 00.

3-1-3. Adjusting Connectors

Some of the adjusting points of the video section are concentrated at VC-210 board CN2904. Connect the measuring instruments via the CPC-6 jig (J-6082-370-A) and the CPC-6 terminal board jig (J-6082-371-A). The following table lists of the pin numbers and signal names of CN2904.

Pin No.	Signal Name	Pin No.	Signal Name
1	LACN SIG	2	EVF BL+
3	EVF BL–	4	EVF VG
5	EVF VCO	6	GND
7	C1 EP	8	DATA VALID
9	GND	10	GND
11	GND	12	TMS
13	TCK	14	TDI
15	TDO	16	GND
17	SWP	18	RF IN/LANC JACK IN
19	GND	20	RF MON

3-1-4. Connecting the Equipment

Connect the measuring instruments as shown in Fig. 5-3-1, and perform the adjustments.

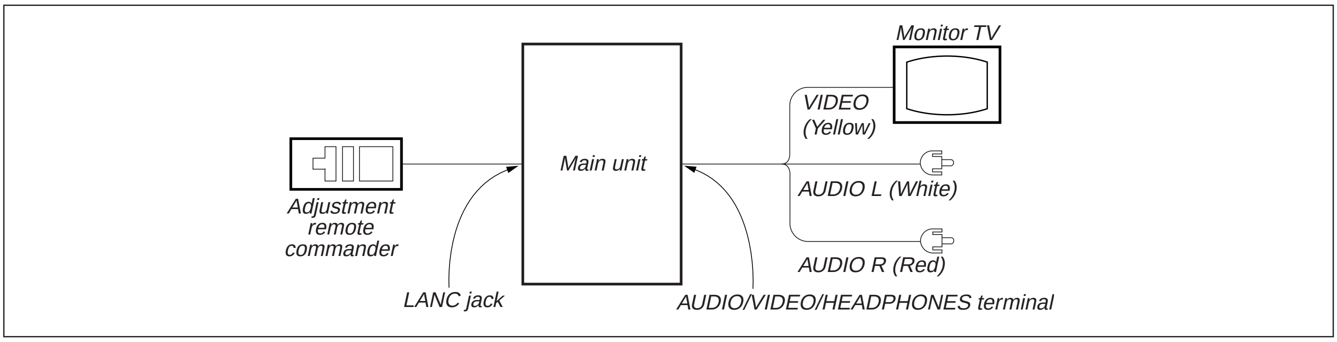

Monitor TV
VIDEO (Yellow)
Main unit
AUDIO L (White)
AUDIO R (Red)
Adjustment remote commander
LANC jack
AUDIO/VIDEO/HEADPHONES terminal

Fig. 5-3-1

3-1-5. Alignment Tapes

Use the alignment tapes shown in the following table.

Name	Use
Tracking standard (XH2-1)	Tape path adjustment
SW/OL standard (XH2-3)	Switching position adjustment
Audio operation check (XH5-3 (NTSC), XH5-3P (PAL))	Audio system adjustment
System operation check (XH5-5 (NTSC), XH-5-5P (PAL))	Operation check
BIST check (XH5-6 (NTSC), XH5-6P (PAL))	BIST check

Fig. 5-3-2 shows the 75% color bar signals recorded on the alignment tape for Audio Operation Check.

Note: Measure with video terminal (Terminated at 75 Ω)

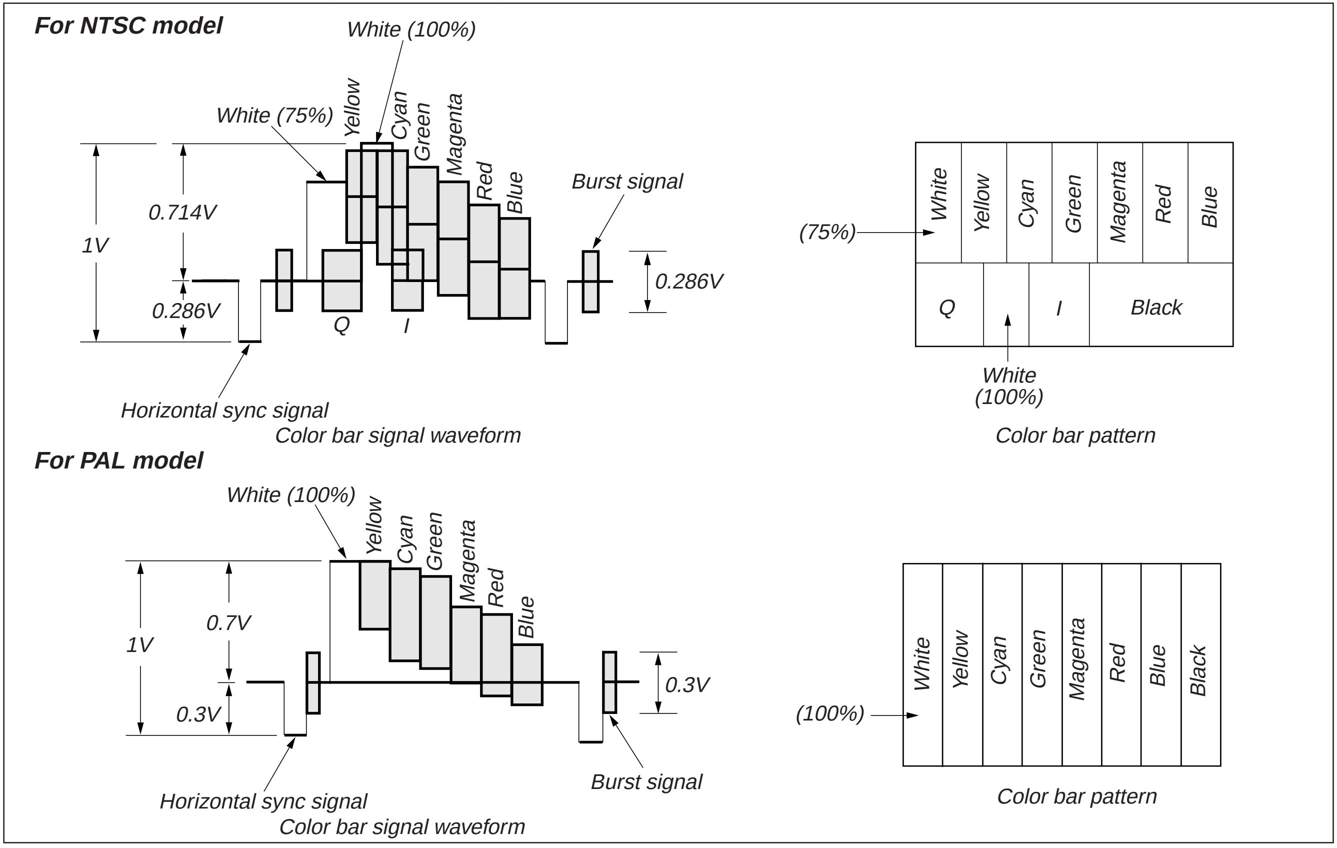

For NTSC model
White (100%)
White (75%)
Yellow
Cyan
Green
Magenta
Red
Blue
Burst signal
0.714V
1V
0.286V
0.286V
Q
I
Horizontal sync signal
Color bar signal waveform
(75%)
White
Yellow
Cyan
Green
Magenta
Red
Blue
Q
I
Black
White (100%)
Color bar pattern
For PAL model
White (100%)
Yellow
Cyan
Green
Magenta
Red
Blue
0.7V
1V
0.3V
0.3V
Horizontal sync signal
Burst signal
Color bar signal waveform
(100%)
White
Yellow
Cyan
Green
Magenta
Red
Blue
Black
Color bar pattern

Fig. 5-3-2

3-1-6. Output Level and Impedance

Video output

Special stereo mini jack

Output signal: 1 Vp-p, 75 Ω unbalanced, sync negative

S video output

4-pin mini DIN

Luminance signal: 1 Vp-p, 75 Ω unbalanced, sync negative

Chrominance signal: 0.286 Vp-p, 75 Ω unbalanced (NTSC)
0.300 Vp-p, 75 Ω unbalanced (PAL)

Audio output

Special stereo mini jack

Output level: 327 mV (at load impedance 47 kΩ)

Output impedance: Below 2.2 kΩ

3-2. INITIALIZATION OF C, D PAGE DATA

1. Initializing the C Page Data

Note: If the page C data is initialized, the following adjustments must be performed again.

1) Modification of C page data
2) Servo and RF system adjustment

Adjusting page	C
Adjusting Address	00 to DF

Initializing Method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 3, address: 80, set data: 0C, and press the PAUSE button of the adjustment remote commander.
3) Select page: 3, address: 80, and check that the data is “1C”.
4) Perform “Modification of C Page Data”.

2. Modification of C Page Data

If the C page data has been initialized, change the data of the “Fixed data-2” address shown in the following tables by manual input.

Modifying Method:

1) Before changing the data, select page: 0, address: 01, and set data: 01.
2) New data for changing are not shown in the tables because they are different in destination. When changing the data, copy the data built in the same model.

   Note: If copy the data built in the different model, the camcorder may not operate.
3) When changing the data, press the PAUSE button of the adjustment remote commander each time when setting new data to write the data in the non-volatile memory.
4) Check that the data of adjustment addresses is the initial value. If not, change the data to the initial value.

Processing After Modifying Data

1) Select page: 2, address: 00, set data: 29, and press the PAUSE button of the adjustment remote commander.
2) Select page: 2, address: 01, set data: 29, and press the PAUSE button of the adjustment remote commander.
3) Select page: 0, address: 01, and set data: 00.
4) Perform “3-4. Servo and RF System Adjustment”.

3. C Page Table

Note: Fixed data-1 : Initialized data (Refer to “1. Initializing the D Page Data”.)
Fixed data-2 : Modified data (Refer to “2. Modification of D Page Data”.)

Address	Initial value		Remark
	NTSC	PAL	
00			Fixed data-1 (Initialized data)
01			
02			
03			
04			
05			
06			
07			
08			
09			
0A			
0B			
0C			
0D			Fixed data-1 (Initialized data)
0E			
0F			
10	EE	EE	Switching position adj.
11	00	00	
12	EE	EE	
13	00	00	
14			Fixed data-1
15			
16	E0	E0	Cap FG duty adj.
17	E0	E0	T reel FG duty adj.
18	2A	2A	AEQ adj.
19	2A	2A	
1A			Fixed data-1
1B	33	33	AEQ adj.
1C	33	33	
1D			Fixed data-1
1E	25	25	AGC center level adj.
1F	3E	3E	PLL fo adj.
20	3E	3E	
21	DC	DC	APC adj.
22	99	99	LPF fo adj.
23			Fixed data-1
24			
25	88	88	Line out Y level adj.
26	E3	E3	Line out Cr level adj.
27	A1	A1	Line out Cb level adj.
28			Fixed data-1
29			
2A			
2B	04	04	Chroma BPF adj.
2C			Fixed data-2 (Modified data, copy the data built in the same model.)
2D			
2E			
2F			
30			
31			
32			Fixed data-1 (Initialized data)
33			
34			
35			
36			
37			
38	00	00	Emergency memory address
39	00	00	
3A	00	00	
3B	00	00	
3C	00	00	
3D	00	00	
3E	00	00	
3F	00	00	
40	00	00	
41	00	00	
42	00	00	
43	00	00	
44			Fixed data-1

Address	Initial value		Remark
	NTSC	PAL	
45			Fixed data-1
46			
47	20	20	PLL f_0 final adj.
48			Fixed data-1 (Initialized data)
49			
4A			
4B			
4C			
4D			
4E			
4F			
50			
51			
52			
53			
54			
55			
56			
57			
58			
59			
5A			
5B			
5C			
5D			
5E			
5F			
60			
61			
62			
63			
64			
65			
66			
67			
68			
69			
6A			
6B			
6C			
6D			
6E			
6F			
70			
71			
72			
73	03	03	APC adj.
74			Fixed data-1 (Initialized data)
75			
76			
77			
78			
79			
7A			
7B			
7C			

Address	Initial value		Remark
	NTSC	PAL	
7D			Fixed data-1 (Initialized data)
7E			
7F			
80			
81			
82			
83			
84			
85			
86			
87			Fixed data-2
88			
89			
8A			
8B			Fixed data-1 (Initialized data)
8C			
8D			
8E			
8F			
90			
91			
92			
93			
94			
95			
96			
97			
98			
99			
9A			
9B			
9C			
9D			
9E			
9F			
A0			
A1			
A2			
A3			
A4			
A5			
A6			
A7			
A8			
A9			
AA			
AB			
AC			
AD			
AE			
AF			
B0			
B1			
B2			Fixed data-2
B3			Fixed data-1
B4			

Address	Initial value		Remark
	NTSC	PAL	
B5			Fixed data-2
B6			
B7			Fixed data-1 (Initialized data)
B8			
B9			
BA			
BB			
BC			
BD			
BE			
BF			
C0			
C1			
C2			
C3			
C4			
C5			
C6			
C7			
C8			
C9			
CA			
CB			
CC			
CD			
CE			
CF			
D0			
D1			
D2			
D3			
D4			
D5			
D6			
D7			
D8			
D9			
DA			
DB			
DC			
DD			
DE			
DF			
E0 to FF			

Table. 5-3-1

4. Initializing the D Page Data

Note: If the page D data is initialized, the following adjustments must be performed again.
1) Modification of D page data
2) "Base Band Block Adjustment" of the video system adjustments
3) LCD system adjustments
4) Color electronic viewfinder system adjustments
5) Battery end adjustment

Adjusting page	D
Adjusting Address	10 to 8F

Initializing Method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 3, address: 80, set data: 0D, and press the PAUSE button of the adjustment remote commander.
3) Select page: 3, address: 80, and check that the data is "1D".
4) Perform "Modification of D Page Data".

5. Modification of D Page Data

If the D page data has been initialized, change the data of the "Fixed data-2" address shown in the following table by manual input.

Modifying Method:

1) Before changing the data, select page: 0, address: 01, and set data: 01.
2) New data for changing are not shown in the tables because they are different in destination. When changing the data, copy the data built in the same model.
   Note: If copy the data built in the different model, the camcorder may not operate.
3) When changing the data, press the PAUSE button of the adjustment remote commander each time when setting new data to write the data in the non-volatile memory.
4) Check that the data of adjustment addresses is the initial value. If not, change the data to the initial value.

Processing After Modifying Data

1) Select page: 2, address: 00, set data: 29, and press the PAUSE button of the adjustment remote commander.
2) Select page: 2, address: 01, set data: 29, and press the PAUSE button of the adjustment remote commander.
3) Perform the following adjustments.
   - "Base Band Block Adjustments" of the video system adjustments
   - LCD system adjustments
   - Color electronic viewfinder system adjustments
   - Battery end adjustment

6. D Page Table

Note: Fixed data-1 : Initialized data. (Refer to "4. Initializing the C Page Data".)
Fixed data-2 : Modified data. (Refer to "5. Modification of C Page Data".)

Address	Initial value		Remark
	NTSC	PAL	
00 to 0F			
10	00	00	Test mode
11			Fixed data-1 (Initialized data)
12			
13			Fixed data-2 (Modified data, copy the data built in the same model.)
14			
15			
16			Fixed data-1
17			Fixed data-2 (Modified data, copy the data built in the same model.)
18			
19			
1A			
1B			
1C			
1D			
1E			
1F			
20			
21			
22			
23			
24			
25			
26			
27			
28			
29			
2A			
2B			
2C			
2D			
2E			
2F			
30	88	88	Battery down adj.
31	8D	8D	
32	A8	A8	
33	BD	BD	
34	C8	C8	
35			Fixed data-1
36			
37			
38			Fixed data-2
39			
3A			
3B			
3C			
3D			Fixed data-1
3E			
3F			
40			
41			Fixed data-2

Address	Initial value		Remark
	NTSC	PAL	
42			Fixed data-2
43			Fixed data-1
44			Fixed data-2
45			Fixed data-1 (Initialized data)
46			
47			
48			
49	05	05	Battery down adj.
4A			Fixed data-1 (Initialized data)
4B			
4C			
4D			
4E			
4F			
50			
51			
52			
53			
54			
55			
56			
57			
58			
59			
5A			
5B			
5C			
5D			
5E			Fixed data-2
5F			Fixed data-1 (Initialized data)
60			
61			
62			
63			
64			
65			
66			
67			
68			
69			
6A			
6B			
6C			
6D			
6E			Fixed data-2
6F			
70			Fixed data-1
71	80	80	White balance adj.(EVF)
72	80	80	
73			Fixed data-2
74			Fixed data-1
75	80	80	VCO adj.(EVF)
76			Fixed data-2
77			Fixed data-1 (Initialized data)
78			
79			

Address	Initial value		Remark
	NTSC	PAL	
7A	98	98	Bright adj.(EVF)
7B	80	80	Contrast adj.(EVF)
7C			Fixed data-1
7D			
7E			
7F			
80	90	90	White balance adj.(LCD)
81	8E	8E	
82	74	74	Black limit adj.(LCD)
83	82	82	Gamma1 adj.(LCD)
84	80	80	VCO adj.(LCD)
85	80	80	Center voltage adj.(LCD)
86			Fixed data-1
87			
88			Fixed data-2
89			
8A	90	90	Bright adj.(LCD)
8B			Fixed data-2
8C	B0	B0	Contrast adj.(LCD)
8D			Fixed data-2
8E			
8F			Fixed data-1
90 to FF			

Table. 5-3-2

3-3. SYSTEM CONTROL SYSTEM ADJUSTMENT

1. Battery End Adjustment (VC-210 board)

Set the battery end voltage.
If the voltage is incorrect, the life of the battery will shorten. The image at the battery end will also lose synchronization.

Mode	Camera recordings
Subject	Arbitrary
Measurement Point	Display data of page: 2, address: 5D
Measuring Instrument	Adjustment remote commander
Adjustment Page	D
Adjustment Address	30 to 34

Switch setting:

1) AUTO FOCUS .... OFF
2) LCD display .... Closed
3) View finder .... ON (View finder is pulled out)

Connection:

1) Connect the regulated power supply and the digital voltmeter to the battery terminal as shown in Fig. 5-3-3.

Adjusting method:

1) Adjust the output voltage of the regulated power supply so that the digital voltmeter reading is 3.5 ± 0.1 V dc.
2) Turn off the power supply.
3) Turn on the HOLD switch of the adjustment remote commander.
4) Turn on the power supply.
5) Load a cassette, and set the recording mode.
6) Select page: 0, address: 01, and set data: 01.
7) Decrease the output voltage of the regulated power supply so that the digital voltmeter reading is 3.30 ± 0.01 V dc.
8) Select page: 2, address: 5D, read the data, and this data is named Dref.
9) Set the read-out data (Dref) to page: D. address: 30 and press the PAUSE button.
10) Convert Dref to decimal notation, and obtain Dref'. (Refer to Table 5-4-1 "Hexadecimal-decimal Conversion Table" of "5-4. Service Mode".)
11) Calculate D_{31}', D_{32}', D_{33}', D_{34}' and D_{49}' using following equations (decimal calculation), convert it to a hexadecimal number, and input each adjustment address.
    Address: 31 D_{31}' = Dref' + 3
    Address: 32 D_{32}' = Dref' + 10
    Address: 33 D_{33}' = Dref' + 10
    Address: 34 D_{34}' = Dref' + 10
    Address: 49 D_{49}' = Dref' + 13
    Note: After setting each data, be sure to press the PAUSE button of the adjustment remote commander.
12) Select page: 0, address: 01, and set data: 00.

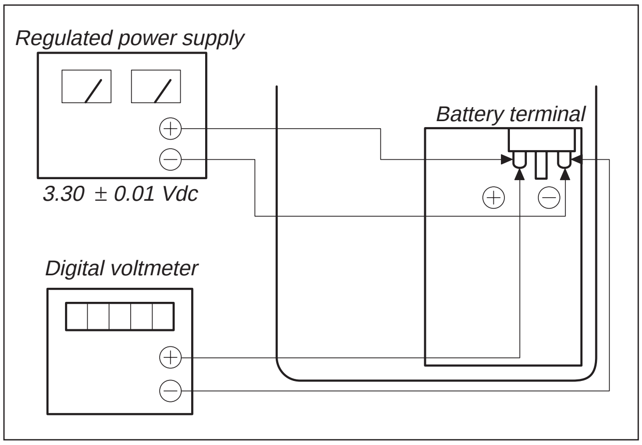


Fig. 5-3-3

3-4. SERVO AND RF SYSTEM ADJUSTMENT

Before performing the servo and RF system adjustments, check that the specified value of “36 MHz Master Oscillator Adjustment” of “CAMERA SYSTEM ADJUSTMENT” is satisfied.

Adjusting Procedure:

1. Cap FG duty adjustment
2. T-reel FG duty adjustment
3. PLL f_0 & LPF f_0 adjustment
4. Switching position adjustment
5. AGC center level adjustment
6. APC & AEQ adjustment
7. PLL f_0 & LPF f_0 final adjustment

1. Cap FG Duty Adjustment (MR-40 board)

Set the Cap FG signal duty cycle to 50% to establish an appropriate capstan servo. If deviated, the uneven rotation of capstan and noise can occur.

Measurement Point	Display data of page: 3, address: 03
Measuring Instrument	Adjustment remote commander
Adjustment Page	C
Adjustment Address	16
Specified Value	00

Adjusting Method:

1) Close the cassette compartment without inserting a cassette.
2) Select page: 0, address: 01, and set data: 01.
3) Select page: 3, address: 01, set data: 1B, and press the PAUSE button of the adjustment remote commander.
4) Select page: 3, address: 02, and check that the data changes starting from “1B” to “2B” to “00” in this order.
5) Select page: 3, address: 03, and check that the data is “00”.
   Note: If the data of page: 3, address: 03 is “02”, adjustment has errors or the mechanism deck is defective.
6) Select page: 0, address: 01, and set data: 00.

2. T-reel FG Duty Adjustment (MR-40 board)

Adjust the take-up reel FG signal duty cycle to an appropriate value so that the correct T-reel FG signal is obtained.

Measurement Point	Display data of page: 3, address: 03
Measuring Instrument	Adjustment remote commander
Adjustment Page	C
Adjustment Address	17
Specified Value	00

Adjusting Method:

1) Close the cassette compartment without inserting a cassette.
2) Select page: 0, address: 01, and set data: 01.
3) Select page: 3, address: 01, set data: 1C, and press the PAUSE button of the adjustment remote commander.
4) Select page: 3, address: 02, and check that the data changes starting from “1C” to "2C" to “00” in this order.
5) Select page: 3, address: 03, and check that the data is “00”.
   Note: If the data of page: 3, address: 03 is “02”, adjustment has errors or the mechanism deck is defective.
6) Select page: 0, address: 01, and set data: 00.

3. PLL f_0 & LPF f_0 Adjustment (MR-40 board)

Mode	VTR stop
Measurement Point	Display data of page: 3, address: 03
Measuring Instrument	Adjustment remote commander
Adjustment Page	C
Adjustment Address	1F, 20, 22, 47
Specified Value	00

Adjusting Method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 3, address: 01, set data: 30, and press the PAUSE button of the adjustment remote commander.
3) Select page: 3, address: 02, and check that the data is changed to “00”.
4) Select page: 3, address: 03, and check that the data is “00”.
   Note: If the data of page: 3, address: 03 is other than “00”, there are errors. (For the error contents, see the following table. For the bit values, refer to “5-4. SERVICE MODE”, “4-3. 3. Bit value discrimination”.
5) Select page: 0, address: 01, and set data: 00.

Bit value of page: 3, address: 03	Error contents
bit 4 = 1	PLL f_0, even channel is defective
bit 5 = 1	PLL f_0, odd channel is defective
bit 6 = 1	LPF f_0 is defective
bit 3 = 1	PLL f_0 final adjustment is defective

4. Switching Position Adjustment (MR-40 board)

Mode	VTR playback
Signal	SW/OL reference tape (XH2-3)
Measurement Point	Display data of page: 3, address: 03
Measuring Instrument	Adjustment remote commander
Adjustment Page	C
Adjustment Address	10, 11, 12, 13
Specified Value	00

Adjusting Method:

1) Insert the SW/OL reference tape and enter the VTR STOP mode.
2) Select page: 0, address: 01, and set data: 01.
3) Select page: 3, address: 21, and check that the data is “02”.
   Note: If the data of page: 3, address: 21 is “72”, the tape top is being played. After playing the tape for 1 to 2 seconds, perform step 4 and higher.
4) Select page: 3, address: 01, set data: 0D, and press the PAUSE button of the adjustment remote commander.
5) Select page: 3, address: 02, and check the data is changed to "00".
6) Select page: 3, address: 03, and check that the data is “00”.
   Note: If bit 0 of page: 3, address: 03 data is “1”, the even channel is defective. If bit 1 is “1”, the odd channel is defective. Contents of the defect is written into page: C, addresses: 10 and 12. See the following table. (For the bit value, refer to “5-4. SERVICE MODE”, “4-3. 3. Bit value discrimination”.)
7) Select page: 0, address: 01, and set data: 00.

When the even channel is defective

Data of page: C, address: 10	Contents of defect
EE	Writing into EEPROM (IC2404) is defective
E8	Adjustment data is out of range
E7	No data is returned from IC1900 (TRX)

When the odd channel is defective

Data of page: C, address: 12	Contents of defect
EE	Writing into EEPROM (IC2404) is defective
E8	Adjustment data is out of range
E7	No data is returned from IC1900 (TRX)

5. AGC Center Level Adjustment (MR-40 board)

Mode	Camera record and playback
Subject	Arbitrary
Measurement Point	Pin ⑳ of CN2904 (RF MON) on VC-210 board (Note 1)
Measuring Instrument	Oscilloscope
Adjustment Page	C
Adjustment Address	1E
Specified Value	The display data of page: 3, address: 03 is “00”

Note 1: Connect a 75 Ω resistor between Pin ⑳ and Pin ⑲ (GND) of CN2904.
75 Ω resistor (Parts code: 1-247-804-11)

Adjusting Method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 2, address: 30, and set data: 40.
3) Record the camera signal for a minute.
4) Playback the recorded segment.
5) Select page: 3, address: 33, and set data: 08.
6) Confirm that the playback RF signal is stable.
7) Select page: 3, address: 01, set data: 23, and press the PAUSE button of the adjustment remote commander.
8) Select page: 3, address: 02, and check that the data is changed to “00”.
9) Select page: 3, address: 03, and check that the data is “00”.
   Note: If data of page: 3, address: 03 is other than “00”, adjustment has errors. (Take an appropriate remedial measures according to the errors referring to the following table.)
10) Select page: 3, address: 33, and set data: 00.
11) Select page: 2, address: 30, and set data: 00.
12) Select page: 0, address: 01, and set data: 00.

Data of page: 3, address: 03	Remedial measures
20	Perform re-adjustment. (Note 2)
30	The machine is defective
40	Perform re-adjustment. (Note 2)
50	The machine is defective

Note 2: If this data is displayed twice successively, the machine is defective.

6. APC & AEQ Adjustment (MR-40 board)

Mode	Camera record and playback
Subject	Arbitrary
Measurement Point	Pin ⑳ of CN2904 (RF MON) on VC-210 board (Note 1)
Measuring Instrument	Oscilloscope
Adjustment Page	C
Adjustment Address	18, 19, 1B, 1C, 21, 73
Specified Value	The display data of page: 3, address: 03 is “00”

Note 1: Connect a 75 Ω resistor between Pin ⑳ and Pin ⑲ (GND) of CN2904.
75 Ω resistor (Parts code: 1-247-804-11)

Note 2: The “5. AGC Center Level Adjustment” must have already been completed before starting this adjustment.

Adjusting Method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 2, address: 30, and set data: 40.
3) Record the camera signal for a minute.
4) Playback the recorded segment.
5) Select page: 3, address: 33, and set data: 08.
6) Check that the playback RF signal is stable.
7) Select page: 3, address: 01, set data: 07, and press the PAUSE button of the adjustment remote commander.
8) Check that the data of page: 3, address: 02 changes from “07” to “00” in about 15 seconds after pressing the PAUSE button.
9) Select page: 3, address: 03, and check that the data is “00”.
   Note: If data of page: 3, address: 03 is other than “00”, adjustment has errors. (Take an appropriate remedial measures according to the errors referring to the following table.)
10) Select page: 3, address: 33, and set data: 00.
11) Select page: 2, address: 30, and set data: 00.
12) Select page: 0, address: 01, and set data: 00.

Data of page: 3, address: 03	Remedial measures
20	Perform re-adjustment. (Note 3)
30	The machine is defective
50	Perform re-adjustment. (Note 3)
60	The machine is defective
80	The machine is defective

Note 3: If this data is displayed twice successively, the machine is defective.

7. PLL f_0 & LPF f_0 Final Adjustment (MR-40 board)

Mode	VTR playback
Signal	Arbitrary
Measurement Point	Display data of page: 3, address: 03
Measuring Instrument	Adjustment remote commander
Adjustment Page	C
Adjustment Address	1F, 20, 22, 47
Specified Value	00

Adjusting Method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 3, address: 01, set data: 30, and press the PAUSE button of the adjustment remote commander.
3) Select page: 3, address: 02, and check that the data changes to "00".
4) Select page: 3, address: 03, and check that the data is “00”.
   Note: If the data of page: 3, address: 03 is other than "00", there are errors. (For the error contents, see the following table. For the bit values, refer to “5-4. SERVICE MODE”, “4-3. 3. Bit value discrimination”.
5) Select page: 0, address: 01, and set data: 00.

Bit value of page: 3, address: 03	Error contents
bit 4 = 1	PLL f_0, even channel is defective
bit 5 = 1	PLL f_0, odd channel is defective
bit 6 = 1	LPF f_0 is defective
bit 3 = 1	PLL f_0 final adjustment is defective

3-5. VIDEO SYSTEM ADJUSTMENTS

Before perform the video system adjustments, check that the specified value of “36 MHz Master Oscillator Adjustment” of “CAMERA SYSTEM ADJUSTMENT” is satisfied.

3-5-1. Base Band Block Adjustments

1. Chroma BPF f_0 Adjustment (VC-210 board)

Set the center frequency of IC1402 chroma band-pass filter.

Mode	VTR stop
Signal	No signal
Measurement Point	CH1: Chroma signal terminal of S-VIDEO jack (terminated in 75 Ω) CH2: Y signal terminal of S-VIDEO jack (terminated in 75 Ω)
Measuring Instrument	Oscilloscope
Adjustment Page	C
Adjustment Address	2B
Specified Value	A = 100 mV p-p or less B = 200 mV p-p or more

Adjusting Method:

1) Check that the burst signal (B) is output to the chroma signal terminal of S-VIDEO.
2) Select page: 0, address: 01, and set data: 01.
3) Select page: 3, address: 0C, set data: 04, and press the PAUSE button of adjustment remote commander.
4) Change the data of page: C, address: 2B for the minimum amplitude of the burst signal level (A).
5) Press the PAUSE button of the adjustment remote commander.
6) Select page: 3, address: 0C, set data: 00, and press the PAUSE button of adjustment remote commander.
7) Check that the burst signal level (B) fulfills the specified value.
8) Select page: 0, address: 01, and set data: 00.

When the data of page: 3, address: 0C, is 04:

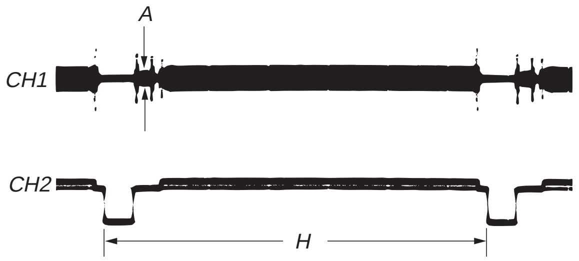


Fig. 5-3-3

When the data of page: 3, address: 0C, is 00.

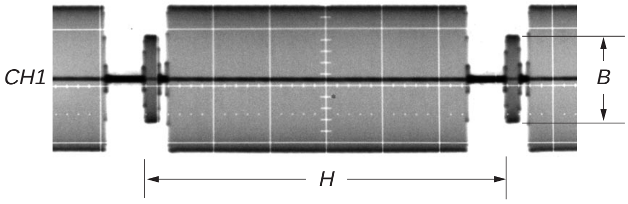


Fig. 5-3-4

2. Line Output Y, Cr, Cb Level Adjustment (VC-210 board)

Mode	Camera
Subject	Arbitrary
Measurement Point	Y level : Y signal terminal of S VIDEO jack (terminated in 75 Ω) Cr, Cb, burst level : Video terminal of AUDIO/VIDEO jack (terminated in 75 Ω)
Measuring Instrument	Oscilloscope
Adjustment Page	C
Adjustment Address	25, 26, 27
Specified Value	Y level: A = 714 ± 14 mV (NTSC) A = 700 ± 14 mV (PAL) Cr level: B = 714 ± 14 mV (NTSC) B = 700 ± 14 mV (PAL) Cb level: C = 714 ± 14 mV (NTSC) C = 700 ± 14 mV (PAL) Burst level: D = 286 ± 14 mV (NTSC) D = 300 ± 6 mV (PAL)

Adjusting Method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 2, address: 35. After noting down the data of this address, set data: 01 to this address.
3) Select page: 3, address: 0C, set data: 02, and press the PAUSE button of adjustment remote commander.
4) Select page: C, address: 25, and change the data until the Y signal level (A) is adjusted to the specified value.
5) Press the PAUSE button of the adjustment remote commander.
6) Select page: C, address: 26, and change the data until the Cr signal level (B) is adjusted to the specified value.
7) Press the PAUSE button of the adjustment remote commander.
8) Select page: C, address: 27, and change the data until the Cb signal level (C) is adjusted to the specified value.
9) Press the PAUSE button of the adjustment remote commander.
10) Check that the burst signal level (D) has the specified value.
11) Select page: 3, address: 0C, set data: 00, and press the PAUSE button of adjustment remote commander.
12) Select page: 2, address: 35, and set data that is noted down at step 2).
13) Select page: 0, address: 01, and set data: 00.

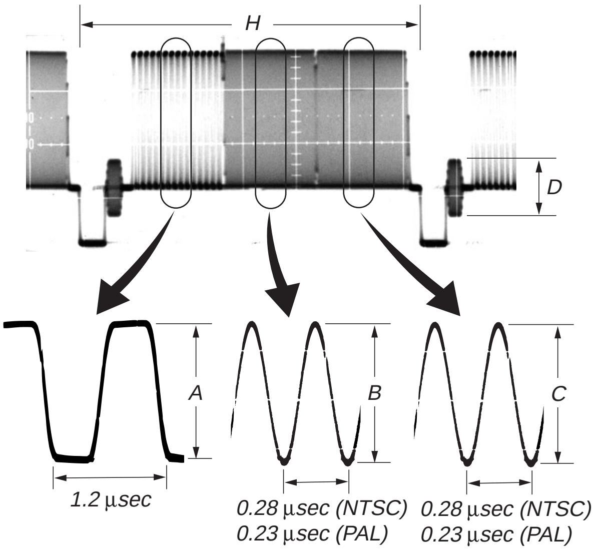


Fig. 5-3-5

3. AV Jack Burst Level Check

Mode	VTR stop
Signal	No signal
Measurement Point	AUDIO/VIDEO jack (terminated in 75 Ω)
Measuring Instrument	Oscilloscope
Specified Value	A = 286 ± 18 mV (NTSC) A = 300 ± 18 mV (PAL)

Checking Method:

1) Check that the burst signal level (A) has the specified value.

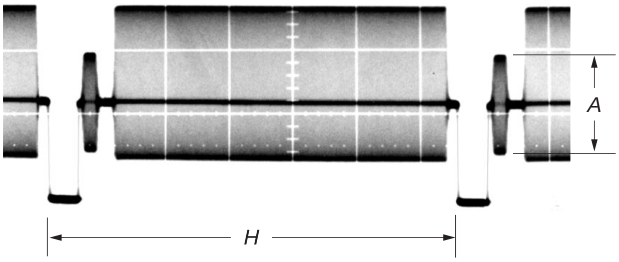


Fig. 5-3-6

4. AV Jack Y Level Check

Mode	VTR stop
Signal	No signal
Measurement Point	AUDIO/VIDEO jack (75 Ω terminated)
Measuring Instrument	Oscilloscope
Specified Value	A = 286 ± 18 mV (NTSC) A = 300 ± 18 mV (PAL)

Checking Method:

1) Check that the SYNC level (A) is the specified value.

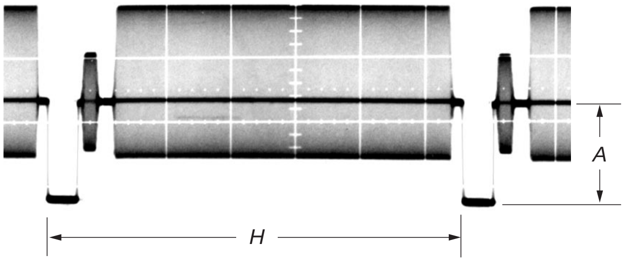


Fig. 5-3-7

3-5-2. BIST Check

1. Playback System Check

1-1. Preparation for Playback

1) Set the POWER switch to the VTR (or PLAYER) position.
2) Connect the adjustment remote commander and set the HOLD switch to the ON (SERVICE) position.
3) Playback the BIST check tape. (XH5-6 (NTSC), XH5-6P (PAL))

Note: Perform all of the following checks in the playback mode.

1-2. IC1900 (TRX) BIST (PB) Check

1) Select page: 3, address: 12, set data: 04, and press the PAUSE button of the adjustment remote commander.
2) Select page: 3, address: 12, set data: 00, and press the PAUSE button of the adjustment remote commander.
3) Select page: 3, address: 13, set data: 02, and press the PAUSE button of the adjustment remote commander.
4) When the playback system from IC1900 (TRX) to IC1601 (TDF) is normal, the display data (combination data) of page: 3, addresses: 16 and 17 agree with any combination as shown below.

NTSC model

Address	Data					
16	63	C5	75	D3	59	FF
17	84	55	07	D6	01	D0

PAL model

Address	Data		
16	86	33	90
17	35	AA	B6

1-3. IC1601 (TFD), BIST (PB) Check

1) Select page: 3, address: 40, set data: 0F, and press the PAUSE button of the adjustment remote commander.
2) Select page: 3, address: 40, set data: 00, and press the PAUSE button of the adjustment remote commander.
3) When the playback system from IC1601 (TFD) to IC1600 (SFD) is normal, the display data (combination data) of page: 3, addresses: 41 and 42 agrees with any combination as shown below.

NTSC model

Address	Data
41	26
42	A1

PAL model

Address	Data
41	69
42	73

1-4. IC1600 (SFD) BIST (PB) Check

1) Select page: 0, address: 01, and set data: 01.
2) Select page: C, address: AC, set data: 21, and press the PAUSE button of the adjustment remote commander.
3) Select page: C, address: AD, set data: 03, and press the PAUSE button of the adjustment remote commander.

   Note: Perform the following data setting while playing back the BIST check tape.
4) Select page: 3, address: 11, set data: 04, and press the PAUSE button of the adjustment remote commander.
5) Select page: 3, address: 12, set data: 08, and press the PAUSE button of the adjustment remote commander.
6) Select page: 3, address: 12, set data: 00, and press the PAUSE button of the adjustment remote commander.
7) Select page: 3, address: 13, set data: 03, and press the PAUSE button of the adjustment remote commander.
8) When the playback system from IC1600 (SFD) to IC2003 (ADC&DAC) is normal, the display data (combination data) of page: 3, addresses: 14 and 15 agrees with any combination as shown below.

NTSC model

Address	Data
14	41
15	81

PAL model

Address	Data
14	2D
15	7C

9) When the playback system from IC1600 (SFD) to IC1602 (LIP) is normal, the display data (combination data) of page: 3, addresses: 16 and 17 agrees with any combination as shown below.

NTSC model

Address	Data	
16	1E	F0
17	B4	31

PAL model

Address	Data
16	1C
17	A6

10) When the playback system from IC1600 (SFD) to IC1601 (TDF) is normal, the display data (combination data) of page: 3, addresses: 18 and 19 agrees with any combination as shown below.

NTSC model

Address	Data	
18	72	16
19	F8	5C

PAL model

Address	Data
18	A7
19	CC

11) When the playback system from IC1600 (SFD) to IC1501 (VFD) is normal, the display data (combination data) of page: 3, addresses: 1A and 1B agrees with any combination as shown below.

NTSC model

Address	Data
1A	12
1B	43

PAL model

Address	Data
1A	90
1B	CE

12) Select page: C, address: AC, set data: 20, and press the PAUSE button of the adjustment remote commander.
13) Select page: C, address: AD, set data: 02, and press the PAUSE button of the adjustment remote commander.
14) Select page: 0, address: 01, and set data: 00.

1-5. IC1501 (VFD) BIST(PB) Check

1) Select page: 0, address: 01, and set data: 01.
2) Select page: C, address: 51, set data: 0F, and press the PAUSE button of the adjustment remote commander.

• VBUS/EX BIST (PB) Check

3) Select page: 3, address: 10, set data: 00, and press the PAUSE button of the adjustment remote commander.
4) Select page: 3, address: 12, set data: 10, and press the PAUSE button of the adjustment remote commander.
5) Select page: 3, address: 12, set data: 00, and press the PAUSE button of the adjustment remote commander.
6) Select page: 3, address: 13, set data: 04, and press the PAUSE button of the adjustment remote commander.
7) When the playback system from IC1600 (SFD) to IC1501 (VFD) is normal, the display data (combination data) of page: 3, addresses: 14 and 15 agrees with any combination as shown below.

NTSC model

Address	Data
14	12
15	43

PAL model

Address	Data
14	90
15	CE

8) When the playback system from IC1501(VFD) to IC207 (Birds) is normal, the display data (combination data) of page: 3, addresses: 16 and 17 agrees with any combination as shown below.

NTSC model

Address	Data
16	FB
17	F4

PAL model

Address	Data
16	54
17	ED

• UPY Y BIST Check

Note: Perform the following data setting while playing back the BIST check tape.

9) Select page: 3, address: 10, set data: 88, and press the PAUSE button of the adjustment remote commander.
10) Select page: 3, address: 12, set data: 10, and press the PAUSE button of the adjustment remote commander.
11) Select page: 3, address: 12, set data: 00, and press the PAUSE button of the adjustment remote commander.
12) Select page: 3, address: 13, set data: 04, and press the PAUSE button of the adjustment remote commander.
13) When the playback system from IC1501 (VFD) to IC5000 (LCD DRIVER) is normal, the display data (combination data) of page: 3, addresses: 16 and 17 agrees with any combination as shown below.

NTSC model

Address	Data
16	9A
17	13

PAL model

Address	Data
16	03
17	C9

• UPY Cr BIST Check

14) Select page: 3, address: 10, set data: 89, and press the PAUSE button of the adjustment remote commander.
15) Select page: 3, address: 12, set data: 10, and press the PAUSE button of the adjustment remote commander.
16) Select page: 3, address: 12, set data: 00, and press the PAUSE button of the adjustment remote commander.
17) Select page: 3, address: 13, set data: 04, and press the PAUSE button of the adjustment remote commander.
18) When the playback system from IC1501 (VFD) to IC5000 (LCD DRIVER) is normal, the display data (combination data) of page: 3, addresses: 16 and 17 agrees with any combination as shown below.

NTSC model

Address	Data
16	1C
17	60

PAL model

Address	Data
16	14
17	A7

• UPY Cb BIST Check

19) Select page: 3, address: 10, set data: 8A, and press the PAUSE button of the adjustment remote commander.
20) Select page: 3, address: 12, set data: 10, and press the PAUSE button of the adjustment remote commander.
21) Select page: 3, address: 12, set data: 00, and press the PAUSE button of the adjustment remote commander.
22) Select page: 3, address: 13, set data: 04, and press the PAUSE button of the adjustment remote commander.
23) When the playback system from IC1501 (VFD) to IC5000 (LCD DRIVER) is normal, the display data (combination data) of page: 3, addresses: 16 and 17 agrees with any combination as shown below.

NTSC model

Address	Data
16	92
17	5A

PAL model

Address	Data
16	B8
17	67

• ENC Ya BIST Check

24) Select page: 3, address: 10, set data: 8B, and press the PAUSE button of the adjustment remote commander.
25) Select page: 3, address: 12, set data: 10, and press the PAUSE button of the adjustment remote commander.
26) Select page: 3, address: 12, set data: 00, and press the PAUSE button of the adjustment remote commander.
27) Select page: 3, address: 13, set data: 04, and press the PAUSE button of the adjustment remote commander.
28) When the playback system from IC1501 (VFD) to IC1402 (AOI) is normal, the display data (combination data) of page: 3, addresses: 16 and 17 agrees with any combination as shown below.

NTSC model

Address	Data
16	3C
17	D2

PAL model

Address	Data
16	69
17	21

• ENC Ya BIST Check

29) Select page: 3, address: 10, set data: 8C, and press the PAUSE button of the adjustment remote commander.
30) Select page: 3, address: 12, set data: 10, and press the PAUSE button of the adjustment remote commander.
31) Select page: 3, address: 12, set data: 00, and press the PAUSE button of the adjustment remote commander.
32) Select page: 3, address: 13, set data: 04, and press the PAUSE button of the adjustment remote commander.
33) When the playback system from IC1501 (VFD) to IC1402 (AOI) is normal, the display data (combination data) of page: 3, addresses: 16 and 17 agrees with any combination as shown below.

NTSC model

Address	Data
16	83
17	9E

PAL model

Address	Data
16	CC
17	ED

• ENC Ca BIST Check

34) Select page: 3, address: 10, set data: 8D, and press the PAUSE button of the adjustment remote commander.
35) Select page: 3, address: 12, set data: 10, and press the PAUSE button of the adjustment remote commander.
36) Select page: 3, address: 12, set data: 00, and press the PAUSE button of the adjustment remote commander.
37) Select page: 3, address: 13, set data: 04, and press the PAUSE button of the adjustment remote commander.
38) When the playback system from IC1501 (VFD) to IC1402 (AOI) is normal, the display data (combination data) of page: 3, addresses: 16 and 17 agrees with any combination as shown below.

NTSC model

Address	Data	
16	FE	22
17	68	CA

PAL model

Address	Data	
16	70	43
17	D5	E4

• ENC Cb BIST Check

39) Select page: 3, address: 10, set data: 8E, and press the PAUSE button of the adjustment remote commander.
40) Select page: 3, address: 12, set data: 10, and press the PAUSE button of the adjustment remote commander.
41) Select page: 3, address: 12, set data: 00, and press the PAUSE button of the adjustment remote commander.
42) Select page: 3, address: 13, set data: 04, and press the PAUSE button of the adjustment remote commander.
43) When the playback system from IC1501 (VFD) to IC1402 (AOI) is normal, the display data (combination data) of page: 3, addresses: 16 and 17 agrees with any combination as shown below.

NTSC model

Address	Data	
16	B2	DE
17	E7	EE

PAL model

Address	Data	
16	ED	9A
17	CB	1E

44) Select page: C, address: 51, set data: 03, and press the PAUSE button of the adjustment remote commander.
45) Select page: 0, address: 01, and set data: 00.

2. Recording System Check

2-1. Preparation for Recording

1) Playback the BIST check tape (XH5-6 (NTSC), XH5-6P (PAL)).
2) Select page: 3, address: 10, set data: C0, and press the PAUSE button of the adjustment remote commander.
3) Select page: 3, address: 11, set data: 07, and press the PAUSE button of the adjustment remote commander.
4) Enter the STOP mode.
5) While keep the HOLD switch of the adjustment remote commander at ON (SERVICE position), eject the BIST check tape and insert a tape for recording in place of the tape.
6) Enter the camera recording mode.

Note: Perform all of the following checks in the camera record mode.

2-2. IC1501(VFD) BIST (REC) Check

1) Select page: 3, address: 12, set data: 10, and press the PAUSE button of the adjustment remote commander.
2) Select page: 3, address: 12, set data: 00, and press the PAUSE button of the adjustment remote commander.
3) Select page: 3, address: 13, set data: 04, and press the PAUSE button of the adjustment remote commander.
4) When the recording system from IC1501 (VFD) to IC1600 (SFD) is normal, the display data (combination data) of page: 3, addresses: 14 and 15 agrees with any combination as shown below.

NTSC model

Address	Data
14	D5
15	0B

PAL model

Address	Data
14	34
15	8A

2-3. IC1600(SFD) BIST (REC) Check

1) Select page: 0, address: 01, and set data: 01.
2) Select page: C, address: AC, set data: 21, and press the PAUSE button of the adjustment remote commander.
3) Select page: C, address: AD, set data: 03, and press the PAUSE button of the adjustment remote commander.
4) Select page: 3, address: 11, set data: 04, and press the PAUSE button of the adjustment remote commander.
5) Select page: 3, address: 12, set data: 08, and press the PAUSE button of the adjustment remote commander.
6) Select page: 3, address: 12, set data: 00, and press the PAUSE button of the adjustment remote commander.
7) Select page: 3, address: 13, set data: 03, and press the PAUSE button of the adjustment remote commander.
8) When the recording system from IC1600 (SFD) to IC1602 (LIP) is normal, the display data (combination data) of page: 3, addresses: 16 and 17 agrees with any combination as shown below.

NTSC model

Address	Data	
16	00	BC
17	15	CE

PAL model

Address	Data	
16	2D	A2
17	F5	7B

9) When the recording system from IC1600 (SFD) to IC1601 (TDF) is normal, the display data (combination data) of page: 3, addresses: 18 and 19 agrees with any combination as shown below.

NTSC model

Address	Data	
18	F7	4F
19	F6	69

PAL model

Address	Data	
18	6C	23
19	C7	76

10) When the recording system from IC1501 (VFD) to IC1600 (SFD) is normal, the display data (combination data) of page: 3, addresses: 1A and 1B agree with any combination as shown below.

NTSC model

Address	Data
1A	D5
1B	0B

PAL model

Address	Data
1A	34
1B	8A

11) Select page: C, address: AC, set data: 20, and press the PAUSE button of the adjustment remote commander.
12) Select page: C, address: AD, set data: 02, and press the PAUSE button of the adjustment remote commander.
13) Select page: 0, address: 01, and set data: 00.

2-4. IC1601 (TFD) BIST (REC) Check

1) Select page: 3, address: 40, set data: 0F, and press the PAUSE button of the adjustment remote commander.
2) Select page: 3, address: 40, set data: 00, and press the PAUSE button of the adjustment remote commander.
3) When the recording system from IC1600 (SFD) to IC1601 (TFD) is normal, the display data (combination data) of page: 3, addresses: 41 and 42 agrees with any combination as shown below.

NTSC model

Address	Data	
41	C2	7A
42	42	DD

PAL model

Address	Data	
41	55	1A
42	B5	04

4) When the recording system from IC1601 (TFD) to IC1900 (TRX) is normal, the display data (combination data) of page: 3, addresses: 43 and 44 agrees with any combination as shown below.

NTSC model

Address	Data	
43	18	C8
44	F0	FB

PAL model

Address	Data	
43	F6	A2
44	2A	E3

2-5. IC1900(TRX) BIST (REC) Check

1) Select page: 3, address: 12, set data: 04, and press the PAUSE button of the adjustment remote commander.
2) Select page: 3, address: 12, set data: 00, and press the PAUSE button of the adjustment remote commander.
3) Select page: 3, address: 13, set data: 02, and press the PAUSE button of the adjustment remote commander.
4) When the recording system from IC1601 (TFD) to IC1900 (TRX) is normal, the display data (combination data) of page: 3, addresses: 14 and 15 agrees with any combination as shown below.

NTSC model

Address	Data	
14	96	BC
15	D1	0E

PAL model

Address	Data	
14	27	B5
15	8D	61

3-6. AUDIO SYSTEM ADJUSTMENTS

[Connection of Audio System Measuring Devices]

Connect the audio system measuring devices as shown in Fig. 5-3-8.

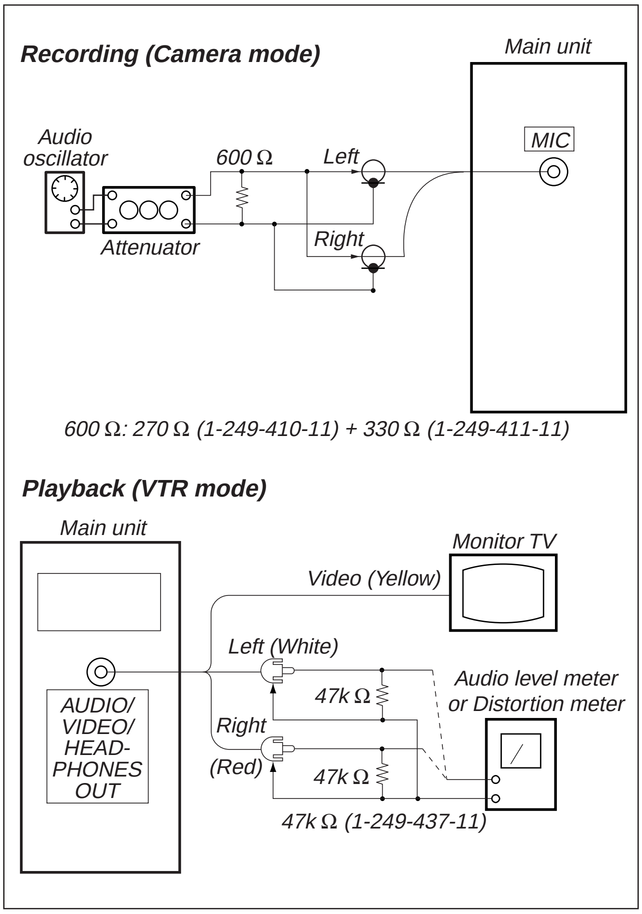

Recording (Camera mode)
Main unit
Audio oscillator
600 Ω
Left
MIC
Attenuator
Right
600 Ω: 270 Ω (1-249-410-11) + 330 Ω (1-249-411-11)
Playback (VTR mode)
Main unit
Monitor TV
Video (Yellow)
Left (White)
Audio level meter or Distortion meter
47k Ω
AUDIO/ VIDEO/ HEAD-PHONES OUT
Right
(Red)
47k Ω
47k Ω (1-249-437-11)

Fig. 5-3-8

1. Playback Level Check

Mode	VTR playback
Signal	Alignment tape: For audio operation check (XH5-3 (NTSC), XH5-3P (PAL))
Measurement Point	AUDIO/VIDEO/HEADPHONES terminal, R- and L-channels (across 47 kΩ load)
Measuring Instrument	Audio level meter and frequency counter
Specified Value	32 kHz mode: 1 kHz, +3 ± 2 dBs 48 kHz mode: 1 kHz, +3 ± 2 dBs 44.1 kHz mode: The 7.35kHz signal level during EMPH ON is –6 ± 2 dB from the signal level during EMPH OFF

Checking Method:

1) Check that the playback signal level is the specified value.

2. Overall Level Characteristics Check

Mode	Camera recording and playback
Signal	1kHz, –66 dBs signal: MIC jack left and right
Measurement Point	AUDIO/VIDEO/HEADPHONES terminal, R- and L-channels (across 47 kΩ load)
Measuring Instrument	Audio level meter
Specified Value	–7.5 ± 3.0 dBs

Checking Method:

1) Input the 1kHz, –66 dBs signal into L- and R-ch of the MIC jack.
2) Record in the camera mode.
3) Playback the recorded section.
4) Check that the L- and R-ch signal levels of AUDIO/VIDEO/ HEADPHONES OUT are the specified value.

3. Overall Distortion Check

Mode	Camera recording and playback
Signal	1kHz, –66 dBs signal: MIC jack left and right
Measurement Point	AUDIO/VIDEO/HEADPHONES terminal, R- and L-channels (across 47 kΩ load)
Measuring Instrument	Audio distortion meter
Specified Value	Below 0.4 % (200 Hz to 6 kHz BPF ON)

Checking Method:

1) Input the 1kHz, –66 dBs signal into L- and R-ch of the MIC jack.
2) Record in the camera mode.
3) Playback the recorded section.
4) Check that L- and R-ch signal levels of AUDIO/VIDEO/ HEADPHONES OUT are the specified value.

4. Overall Noise Level Check

Mode	Camera recording and playback
Signal	No signal: MIC jack left and right (Insert a shorting plug in the MIC jack)
Measurement Point	AUDIO/VIDEO/HEADPHONES OUT terminal, R- and L-channels (across 47 kΩ load)
Measuring Instrument	Audio level meter
Specified Value	Below –45 dBs (IHF-A filter ON, 20 kHz LPF ON)

Checking Method:

1) Insert a shorting plug in the MIC jack.
2) Record in the camera mode.
3) Playback the recorded section.
4) Check that L- and R-ch noise level of the AUDIO/VIDEO/HEADPHONES terminal is the specified value.

5. Overall Separation Check

Mode	Camera recording and playback
Signal	No signal: MIC jack <left>, [right] 1kHz, –66 dBs signal: MIC jack <right> [left]
Measurement Point	Audio <left> [right] terminal of AUDIO/VIDEO/HEADPHONES OUT (across 47 kΩ load)
Measuring Instrument	Audio level meter
Specified Value	Below –40 dBs (IHF-A filter ON)

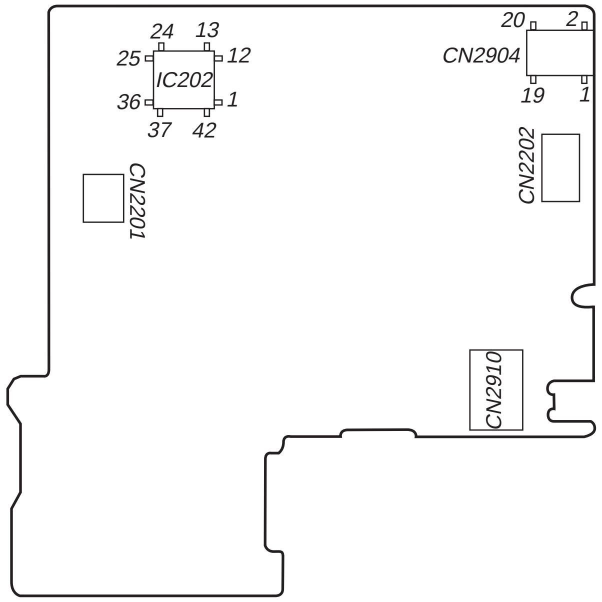
< > : Left channel check
[ ] : Right channel check

Checking Method:

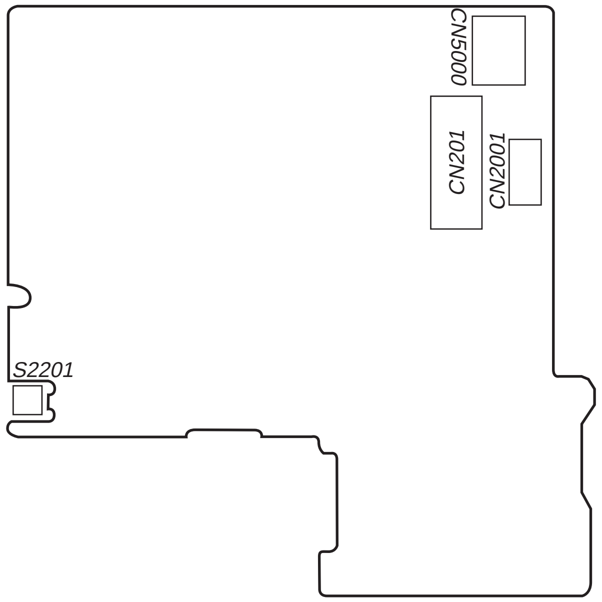
1) Short the MIC jack <left> [right] terminal with GND using a jumper.
2) Input the 1kHz, –66 dBs signal in the <right> [left] terminal of the MIC jack.
3) Record in the camera mode.
4) Playback the recorded section.
5) Check that the signal level of the <left> [right] terminal of AUDIO /VIDEO HEADPHONES is the specified value.

ARRANGEMENT DIAGRAM FOR ADJUSTMENT PARTS

VC-210 BOARD (SIDE A)



VC-210 BOARD (SIDE B)



5-4. SERVICE MODE

4-1. ADJUSTMENT REMOTE COMMANDER

The adjustment remote commander is used for changing the calculation coefficient in signal processing, EVR data, etc. The adjustment remote commander performs bi-directional communication with the unit using the remote commander signal line (LANC). The resultant data of this bi-directional communication is written in the non-volatile memory.

1. Using the Adjustment Remote Commander

1) Connect the adjustment remote commander to the LANC terminal.
2) Set the HOLD switch of the adjustment remote commander to “HOLD” (SERVICE position). If it has been properly connected, the LCD on the adjustment remote commander will display as shown in Fig. 5-4-1.

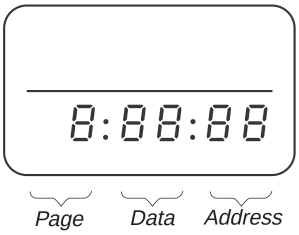


Fig. 5-4-1

3) Operate the adjustment remote commander as follows.
   - Changing the page
     The page increases when the EDIT SEARCH+ button is pressed, and decreases when the EDIT SEARCH– button is pressed. There are altogether 16 pages, from 0 to F.

Hexadecimal notation	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
LCD Display	0	1	2	3	4	5	6	7	8	9	A	b	c	d	E	F
Decimal notation conversion value	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

   - Changing the address
     The address increases when the FF (▶▶) button is pressed, and decreases when the REW (◀◀) button is pressed. There are altogether 256 addresses, from 00 to FF.
   - Changing the data (Data setting)
     The data increases when the PLAY (▶) button is pressed, and decreases when the STOP (■) button is pressed. There are altogether 256 data, from 00 to FF.
   - Writing the adjustment data
     The PAUSE button must be pressed to write the adjustment data (C, D, F page) in the nonvolatile memory. (The new adjusting data will not be recorded in the nonvolatile memory if this step is not performed.)
4) After completing all adjustments, turn off the main power supply (4.2 V) once.

2. Precautions Upon Using the Adjustment Remote Commander

Mishandling of the adjustment remote commander may erase the correct adjustment data at times. To prevent this, it is recommended that all adjustment data be noted down before beginning adjustments and new adjustment data after each adjustment.

4-2. DATA PROCESS

The calculation of the DDS display and the adjustment remote commander display data (hexadecimal notation) are required for obtaining the adjustment data of some adjustment items. In this case, after converting the hexadecimal notation to decimal notation, calculate and convert the result to hexadecimal notation, and use it as the adjustment data. Indicates the hexadecimal-decimal conversion table.

Hexadecimal-decimal Conversion Table

Lower digit of hexadecimal / Upper digit of hexadecimal	0	1	2	3	4	5	6	7	8	9	A (A)	B (b)	C (c)	② D (d)	E (E)	F (F)
0	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
2	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47
3	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63
4	64	65	66	67	68	69	70	71	72	73	74	77	76	77	78	79
5	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95
6	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111
7	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127
8	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143
9	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159
A (A)	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175
① B (b)	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191
C (c)	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207
D (d)	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223
E (E)	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239
F (F)	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255

Note: The characters shown in the parenthesis ( ) shown the display on the adjustment remote commander.

(Example) If the DDS display or the adjustment remote commander shows BD (bd);
Because the upper digit of the adjustment number is B (b), and the lower digit is D (d), the meeting point "189" of ① and ② in the above table is the corresponding decimal number.

Table. 5-4-1

4-3. SERVICE MODE

1. Setting the Test Mode

Page D	Address 10

Data	Function
00	Normal
02	Forced VTR power ON

- Before setting the data , select page: 0, address: 01, and set data: 01.
- For page D, the data set is recorded in the non-volatile memory by pressing the PAUSE button of the adjustment remote commander. In this case, take note that the test mode will not be exited even when the main power is turned off (4.2 Vdc).
- After completing adjustments/repairs, be sure to return the data of this address to 00.
  Select page: 0, address: 01, and set data: 00.

2. Emergence Memory Address

Page C	Address 38 to 43

Address	Contents
38	EMG code when first error occurs
3A	Upper: MSW code when shift starts when first error occurs Lower: MSW code when first error occurs
3B	Lower: MSW code to be moved when first error occurs
3C	EMG code when second error occurs
3E	Upper: MSW code when shift starts when second error occurs Lower: MSW code when second error occurs
3F	Lower: MSW code to be moved when second error occurs
40	EMG code when last error occurs
42	Upper: MSW code when shift starts when last error occurs Lower: MSW code when last error occurs
43	Lower: MSW code to be moved when last error occurs

When no error occurs in this unit, data “00” is written in the above addresses (38 to 43). when first error occurs in the unit, the data corresponding to the error is written in the first emergency address (38 to 3B). In the same way, when the second error occurs, the data corresponding to the error is written in the second emergency address (3C to 3F). Finally, when the last error occurs, the data corresponding to the error is written in the last emergency address (40 to 43). Therefore, the data at address 40 to 43 are updataed whenever an emergency occurs.

Note: After completing adjustments, be sure to initialize the data of addresses 38 to 43 to “00”.

Initializing method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: C, address: 38, set data: 00, and press the PAUSE button.
3) Select address: 39 to 43 and set the data “00” into them in the same way as in address: 38.
4) Select page: 0, address: 01, and set data: 00.

2-1. EMG Code (Emergency Code)

Codes corresponding to the errors which occur are written in addresses 30, 34 and 38. The type of error indicated by the code are shown in the following table.

Code	Emergency Type
00	No error
10	Loading motor emergency during loading
11	Loading motor emergency during unloading
22	T-reel emergency during normal rotation
23	S-reel emergency during normal rotation
24	T-reel emergency (Short circuit between S-reel terminal and T-reel terminal)
30	FG emergency at the start up of the capstan
40	FG emergency at the start up of the drum
42	FG emergency during normal rotation of the drum

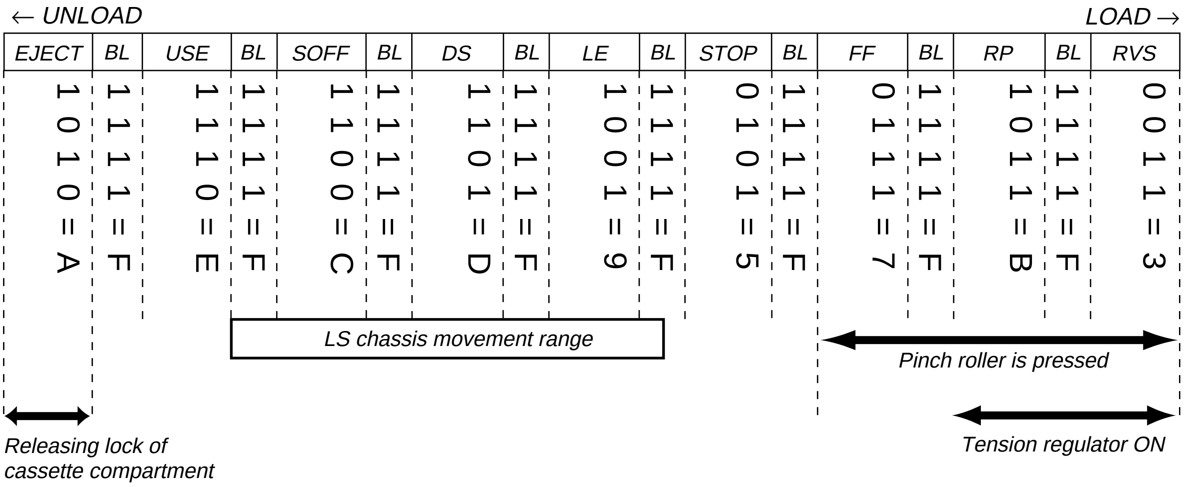
2-2. MSW Code

MSW when errors occur:
Information on MSW (mode SW) when errors occur

MSW when movement starts:
Information on MSW when movements starts when the mechanism position is moved (When the L motor is moved)

MSW of target of movement:
Information on target MSW of movement when the mechanism position is moved

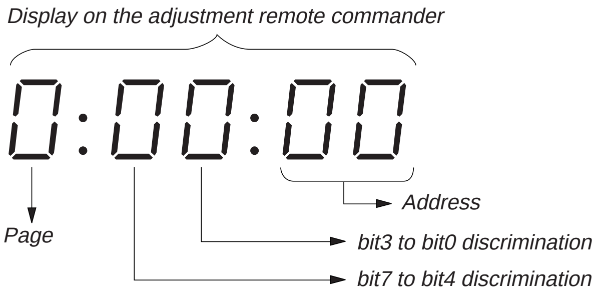
Mechanism Position


← UNLOAD
LOAD →
EJECT
BL
USE
BL
SOFF
BL
DS
BL
LE
BL
STOP
BL
FF
BL
RP
BL
RVS
1010 = A
1111 = F
1110 = E
1111 = F
1100 = C
1111 = F
1101 = D
1111 = F
1001 = 9
1111 = F
0101 = 5
1111 = F
0111 = 7
1111 = F
1011 = B
1111 = F
0011 = 3
LS chassis movement range
Pinch roller is pressed
Tension regulator ON
Releasing lock of cassette compartment

Position	Code	Contents
EJECT	A	Position at which the cassette compartment lock is released, and position at the farthest unload side mechanically at which the mechanism can move no further in the UNLOAD direction.
BL	F	BLANK code, at the boundary between codes. The mechanism will not stop at this code during operations. (Excluding LOAD/UNLOAD)
USE	E	EJECT completion position. When the cassette is ejected, the mechanism will stop at this position. Cassette IN standby. The guide will start protruding out as the mechanism moves towards the LOAD position.
SOFF	C	Code during loading. Code outputs while the LS chassis is moving.
DS	D	LS operations and guide loading are performed here.
LE	9	Current limiter is turned off.
STOP	5	Stop position in the loading state. The pinch roller separates, the tension regulator returns, and the brake is imposed on both reels.
FF	7	FF position. The tension regulator is half on. This position is not used except for the FF mode.
RP	B	PB, REC, CUE, Pause, FX2, FWD-SLOW positions. When the pinch roller is pressed, and the tension regulator is ON, the mechanism is operating at this position in modes in which normal images are shown.
RVS	3	Reverse running position. REW, REV, RX1, RX2, and RVS-SLOW are performed at this position.
NULL	0	Code not existing in the MD. When errors occur when the loading motor is not driving, this code is memorized.

3. Bit Value Discrimination

Bit values must be discriminated using the display data of the adjustment remote commander for following items. Use the table below to discriminate if the bit value is “1” or “0”.


Display on the adjustment remote commander
0:00:00
Page
Address
bit3 to bit0 discrimination
bit7 to bit4 discrimination

Display on the adjustment remote commander	Bit values			
	bit3 or bit7	bit2 or bit6	bit1 or bit5	bit0 or bit4
0	0	0	0	0
1	0	0	0	1
2	0	0	1	0
3	0	0	1	1
4	0	1	0	0
5	0	1	0	1
6	0	1	1	0
7	0	1	1	1
Ⓐ 8	1	0	0	0
9	1	0	0	1
A (A)	1	0	1	0
B (b)	1	0	1	1
C (c)	1	1	0	0
D (d)	1	1	0	1
Ⓑ E (E)	1	1	1	0
F (F)	1	1	1	1

Example: If “8E” is displayed on the adjustment remote commander, the bit values for bit7 to bit4 are shown in the Ⓐ column, and the bit values for bit3 to bit0 are shown in the Ⓑ column.

4. Switch Check (1)

Page 2	Address 43

Bit	Function	When bit value=1	When bit value=0
0	VTR MODE SW	OFF	ON
1	CAM MODE SW	OFF	ON
2	START/STOP SW	OFF	ON
3	EJECT SW	OFF	ON
4	CC DOWN SW	OFF	ON
5	PHOTO FREEZE SW	OFF	ON
6			
7			

Using method:

1) Select page: 2, address: 43.
2) By discriminating the bit value of display data, the state of the switches can be discriminated.

5. Switch Check (2)

Page 2	Address 60 to 67

Using method:

1) Select page: 2, address: 60 to 67.
2) By discriminating the display data, the pressed key can be discriminated.

Address	Data						
	00 (00 to 0A)	19 (0B to 24)	32 (25 to 44)	59 (45 to 6E)	85 (4F to 9F)	B8 (A0 to D4)	EE (D5 to FF)
60 KEY ADO IC2204 (93)	STOP (ME4780 block)	PAUSE (ME4780 block)	REW (ME4780 block)	DISPLAY (ME4780 block)	EDIT SEARCH + (ME4780 block)	DIGITAL EFFECT (ME4780 block)	No key input
61 KEY AD1 IC2204 (94)	FF (ME4780 block)	PLAY (ME4780 block)	TITLE (ME4780 block)	MENU (ME4780 block)			No key input
62 KEY AD2 IC2204 (95)	EDIT SEARCH – (ME4780 block)	END SEARCH (ME4780 block)	LCD BRIGHT + (ME4780 block)	LCD BRIGHT – (ME4780 block)	VOLUME + (ME4780 block)	VOLUME – (ME4780 block)	No key input
63 KEY AD3 IC2204 (96)	FADER (FK4780 block)					EVF ON (VF-125 board) (S5500)	EVF OFF (VF-125 board) (S5500)
64 KEY AD4 IC2204 (97)				PHOTO REC (FK4780 block)	FOCUS INFINITY (FK4780 block)	FOCUS AUTO/ MANUAL (FK4780 block)	No key input
65 KEY AD5 IC2204 (98)	EXPOSURE (FK4780 block)	BACK LIGHT (FK4780 block)		EXECUTE (FK4780 block)	START/STOP MODE (5SEC REC) (ME4780 block)	START/STOP MODE (PUSH REC) (ME4780 block)	START/STOP MODE (NORMAL REC) (ME4780 block)
66 KEY AD6 IC2204 (99)	PANEL CLOSE (VC-210 board) (S2201)						PANEL OPEN (VC-210 board) (S2201)
67 KEY AD7 IC2204 (100)	PANEL REVERSE (RP-31 board) (S7500)						PANEL NORMAL (RP-31 board) (S7500)

6. Record of Use check

Page 2	Address A2 to AA

Address	Function		Remarks
A2	Drum rotation counted time (BCD code)	Minutes	
A3		Hour (L)	10th place digit and 1st place digit of counted time (decimal digit)
A4		Hour (H)	1000th place digit and 100th place digit of counted time (decimal digit)
A5	User initial power on date (BCD code)	Year	After setting the clock, set the date of power on next.
A6		Month	
A7		Day	
A8	Final condensation occurrence date (BCD code)	Year	
A9		Month	
AA		Day	

Using method:

1) The record of use data is displayed at page: 2, addresses: A2 to AA.

Note: This data will be erased when the coin lithium battery (MR-40 board CN2507) is removed (reset).

SECTION 6
REPAIR PARTS LIST

6-1. EXPLODED VIEWS

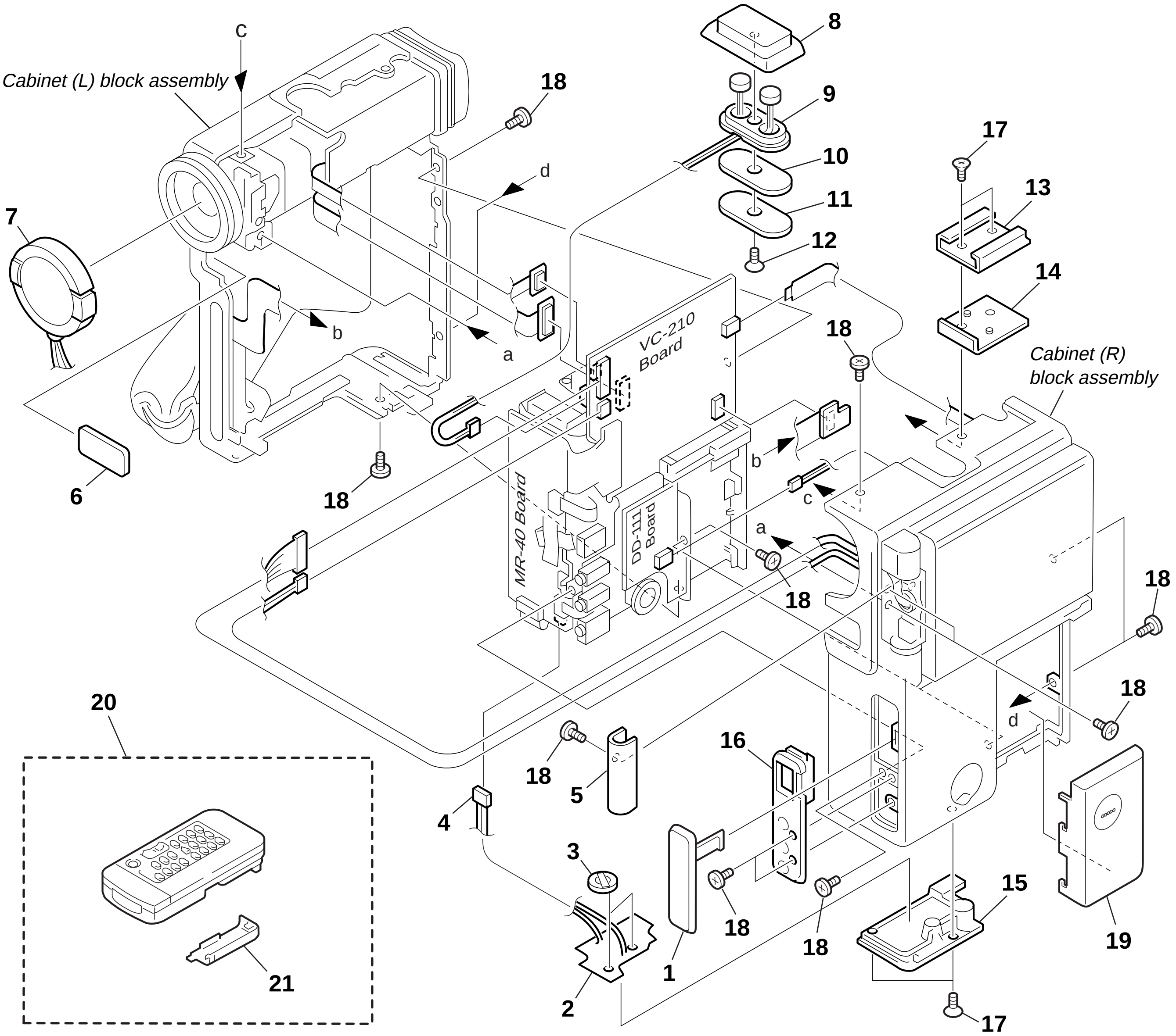
NOTE:

- -XX, -X mean standardized parts, so they may have some differences from the original one.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Abbreviation
  AUS : Australian model.
  CND : Canadian model.
  HK : Hong Kong model.
  JE : Tourist model.
  CN : Chinese model.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

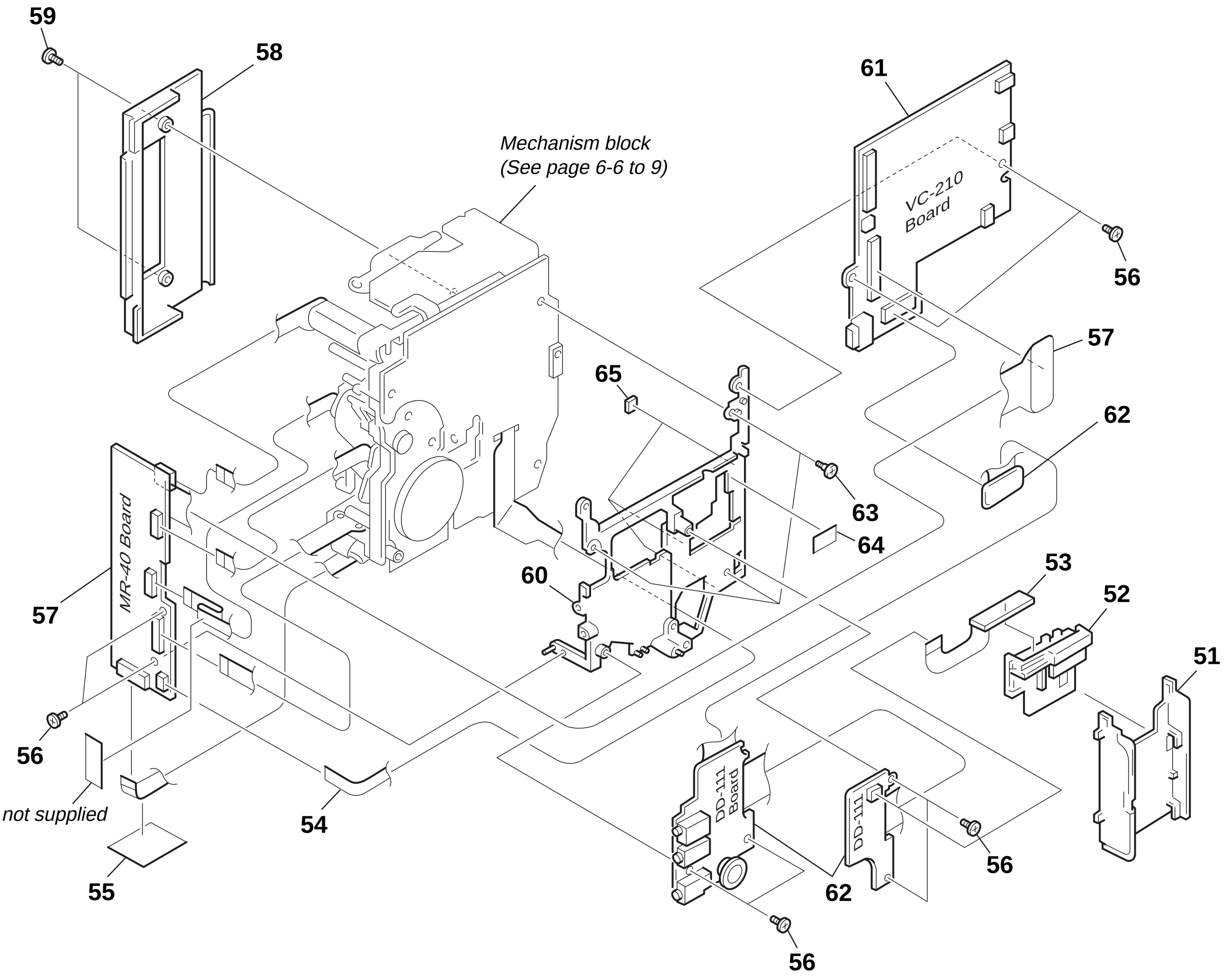
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

6-1-1. CABINET (R) SECTION



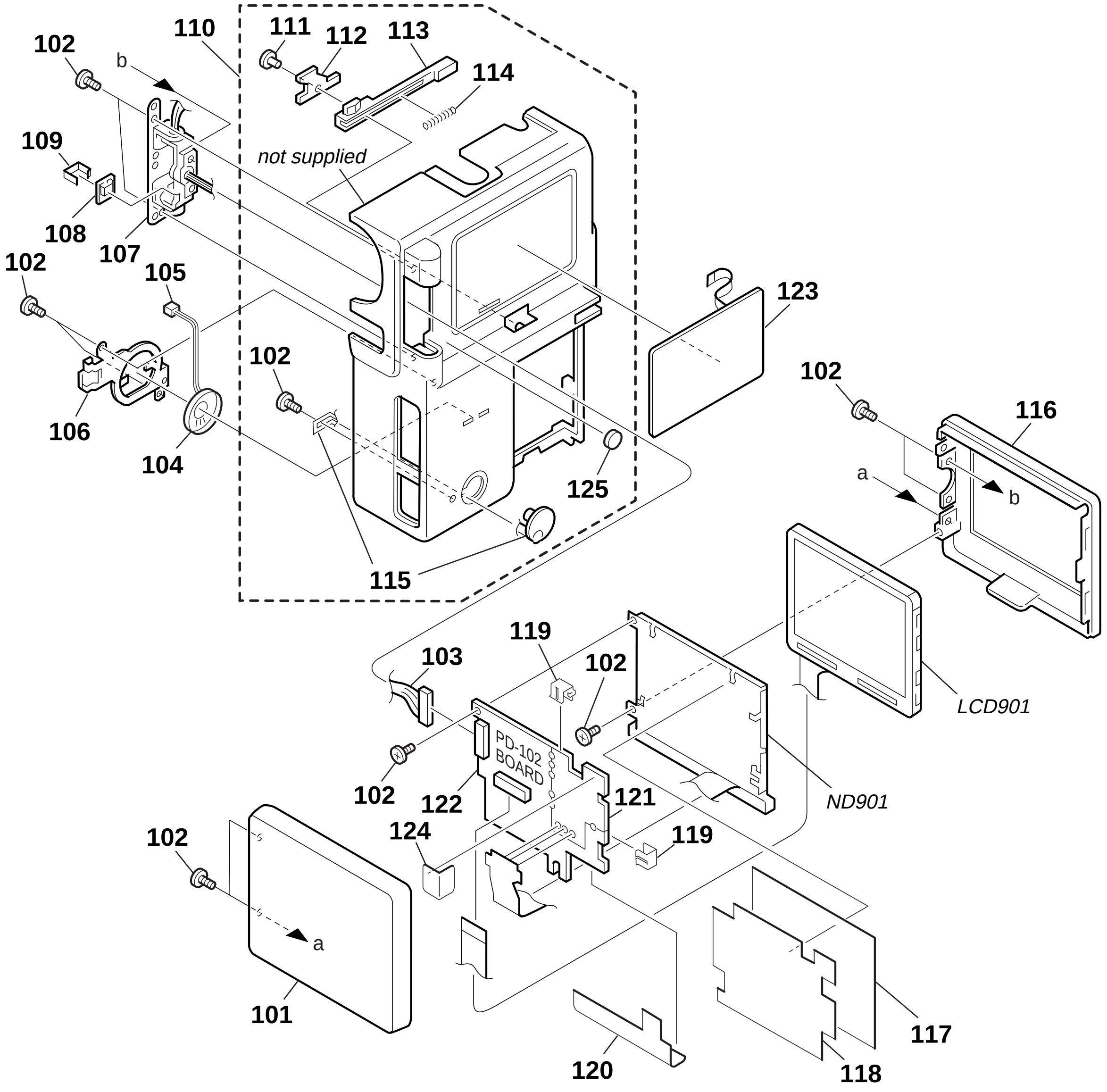
Ref. No.	Part No.	Description	Remarks
1	X-3948-883-1	COVER ASSY, DV JACK	
2	1-670-867-11	FP-36 FLEXIBLE BOARD	
* 3	1-528-909-11	BATTERY, LITHIUM SECONDARY	
4	1-959-018-11	HARNESS (LI-58)	
5	3-051-231-01	COVER, HINGE	
6	X-3948-924-1	WINDOW ASSY, REMOTE CONTROL	
7	X-3948-882-1	CAP ASSY, LENS	
8	X-3948-881-1	CASE ASSY, MICROPHONE	
9	1-475-975-11	MICROPHONE UNIT	
* 10	3-051-990-01	SHEET, MIC GEL	
* 11	3-051-227-01	PLATE, MIC RETAINER	
12	3-948-809-21	SCREW (M2X4)	
13	3-724-511-41	SHOE, ACCESSORY	
* 14	3-051-228-01	PLATE, SHOE	
15	3-051-219-01	SCREW, TRIPOD	
16	3-051-252-11	PLATE, JACK ORNAMENTAL (PC1E:E,CN,HK,JE)	
16	3-051-252-21	PLATE, JACK ORNAMENTAL (PC1)	
16	3-051-252-31	PLATE, JACK ORNAMENTAL (PC1E:AEP,UK,AUS)	
17	3-742-871-31	SCREW (M2X3.5)	
18	3-973-497-41	SCREW (M1.7), 0-NO. +P 2	
19	3-052-290-01	COVER, BATTERY TERMINAL	
20	1-475-141-21	COMMANDER, REMOTE (RMT-808) (PC1/PC1E:EXCEPT AEP,UK)	
20	1-475-141-31	COMMANDER, REMOTE (RMT-809) (PC1E:AEP,UK)	
21	3-742-854-21	LID, BATTERY CASE	

6-1-2. MAIN BOARD SECTION


59
58
61
Mechanism block
(See page 6-6 to 9)
VC-210 Board
56
57
65
62
63
64
MR-40 Board
57
60
53
52
51
56
not supplied
54
55
DD-111 Board
DD-111
56
62
56

Ref. No.	Part No.	Description	Remarks
51	3-051-230-01	PLATE, BATT	
52	1-694-459-11	TERMINAL BOARD, BATTERY	
53	1-670-873-11	TB-37 PRINTED WIRING BOARD	
54	1-666-101-11	FP-585 FLEXIBLE BOARD	
55	3-051-317-01	SHEET, CAP FLEXIBLE	
56	3-973-497-41	SCREW (M1.7), 0-NO. +P 2	
57	A-7073-668-A	MR-40 BOARD, COMPLETE	
58	X-3947-927-1	COVER ASSY	
59	3-719-695-21	SCREW (M1.7X3.5), SPECIAL HEAD	
60	3-051-223-01	FRAME, MD	
61	A-7094-009-A	VC-210 BOARD, COMPLETE (PC1)	
61	A-7073-710-A	VC-210 BOARD, COMPLETE (PC1E:AEP,UK)	
61	A-7073-711-A	VC-210 BOARD, COMPLETE (PC1E:EXCEPT AEP,UK)	
62	A-7073-669-A	DD-111 BOARD, COMPLETE	
63	3-964-734-01	SCREW, STEP	
* 64	3-052-248-01	SHEET, BATT PLATE	
65	3-975-921-01	SHEET, VIBRATION PROOF	

6-1-3. CABINET (R) BLOCK ASSEMBLY

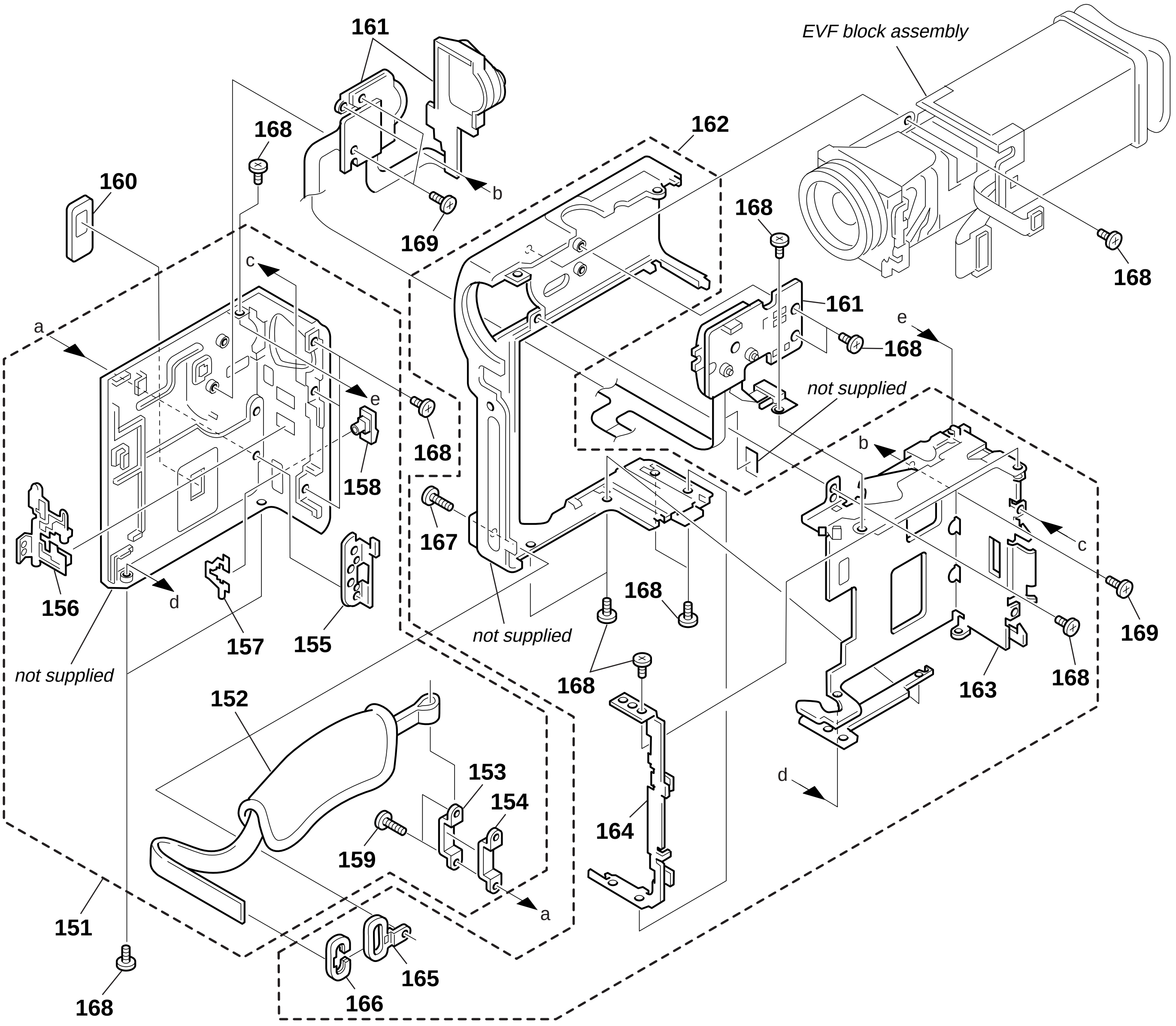

102
110
111
112
113
114
b
109
not supplied
108
102
107
105
123
102
106
104
102
116
a
b
125
115
119
103
102
LCD901
PD-102 BOARD
ND901
102
122
121
124
119
102
a
101
117
120
118

Ref. No.	Part No.	Description	Remarks
101	3-051-253-11	CABINET (R), LCD (PC1/PC1E:CN,E,HK,JE)	
101	3-051-253-21	CABINET (R), LCD (PC1E:AEP,UK,AUS)	
102	3-973-497-41	SCREW (M1.7), 0-NO. +P 2	
103	1-959-019-11	HARNESS (PD-107)	
104	1-505-862-11	SPEAKER (2.0CM)	
105	1-959-017-11	HARNESS (SP-158)	
* 106	3-051-224-01	PLATE, SP RETAINER	
107	X-3948-877-1	HINGE ASSY, LCD	
108	A-7073-670-A	PR-31 BOARD, COMPLETE	
* 109	3-051-218-01	CLIP, SW	
110	X-3948-983-1	CABINET (R) ASSY (PC1)	
110	X-3948-981-1	CABINET (R) ASSY (PC1E)	
111	3-051-257-01	PIN, LCD LOCK	
112	3-051-193-01	RETAINER, LCD LOCK	
113	3-051-191-01	LOCK, LCD	
114	3-051-192-01	SPRING, COMPRESSION	
115	X-3948-980-1	COVER ASSY, S TERMINAL (PC1E)	
115	X-3948-982-1	COVER ASSY, S TERMINAL (PC1)	
116	3-051-216-01	CABINET (L), LCD	
117	3-051-233-01	SHEET, BL SHIELD	
118	3-051-234-01	SHEET, BL INSULATING	
* 119	3-051-232-01	CLIP, PCB	
120	3-051-803-01	SHEET, PD INSULATING	
⚠121	1-475-711-11	TRANSFORMER UNIT, INVERTER	
122	A-7073-671-A	PD-102 BOARD, COMPLETE	
123	1-475-920-21	SWITCH BLOCK, CONTROL (ME-4781)	
124	3-052-644-01	SHEET, BL LIGHT INTERCEPTION	
* 125	3-052-283-01	SPACER, LOCK	
LCD901	8-753-050-08	DCX501BK-1	
⚠ND901	1-517-800-11	TUBE, FLUORESCENT,COLD CATHODE	

Note :
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

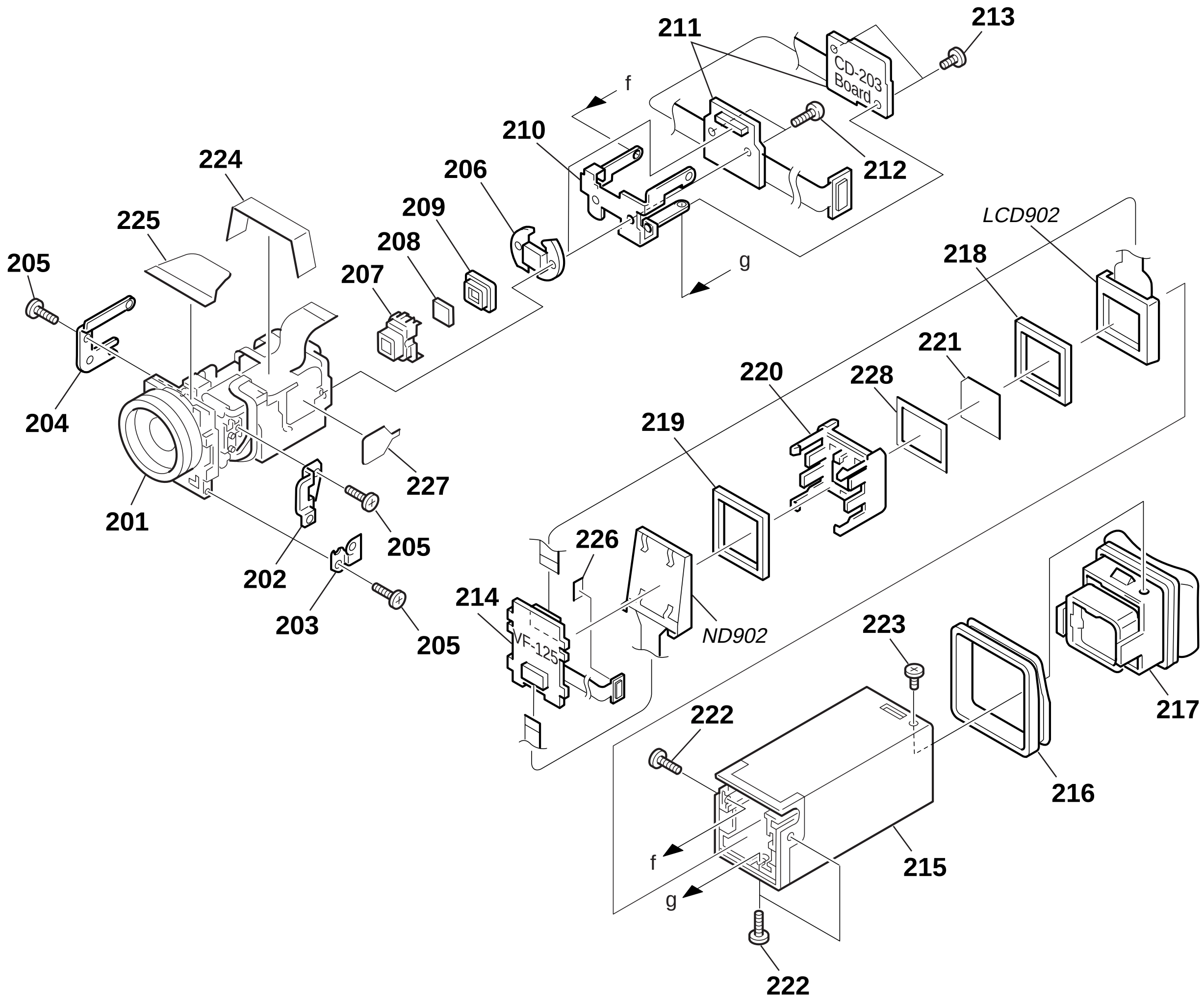
Note :
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

6-1-4. CABINET (L) BLOCK ASSEMBLY


161
EVF block assembly
168
162
160
b
169
168
168
c
161
a
e
168
e
not supplied
168
b
158
167
c
156
d
168
169
157
155
not supplied
168
not supplied
152
168
163
153
d
154
164
159
a
151
165
168
166

Ref. No.	Part No.	Description	Remarks
151	X-3948-894-1	CABINET (G) ASSY (E) (PC1/PC1E:CN,E,HK,JE)	
151	X-3948-895-1	CABINET (G) ASSY (CE) (PC1E:AEP,UK,AUS)	
152	3-051-187-01	BELT, GRIP	
153	3-051-186-01	COVER, BRACKET	
154	3-051-188-01	BRACKET, BELT	
155	3-051-185-01	SHEET METAL, NUT	
156	3-051-176-01	BUTTON, FADER	
157	3-978-765-01	SLIDER, G LOCK	
158	3-051-177-01	KNOB, EJECT	
159	3-052-620-01	SCREW	
160	3-051-248-01	WINDOW, CASSETTE COMPARTMENT (PC1)	
160	3-051-248-11	WINDOW, CASSETTE COMPARTMENT (PC1E)	
161	1-475-919-11	SWITCH BLOCK, CONTROL (FK-4780)	
162	X-3948-896-1	CABINET (L) ASSY (E)	
163	X-3948-871-1	LOCK ASSY, GRIP	
164	3-051-171-01	PLATE, LOCK	
* 165	3-978-784-01	BRACKET, STRAP	
* 166	3-978-785-01	CAP, BRACKET	
167	3-724-455-41	SCREW	
168	3-973-497-41	SCREW (M1.7), 0-NO. +P 2	
169	3-713-791-01	SCREW (M1.7X4), TAPPING, P2	

6-1-5. EVF BLOCK ASSEMBLY

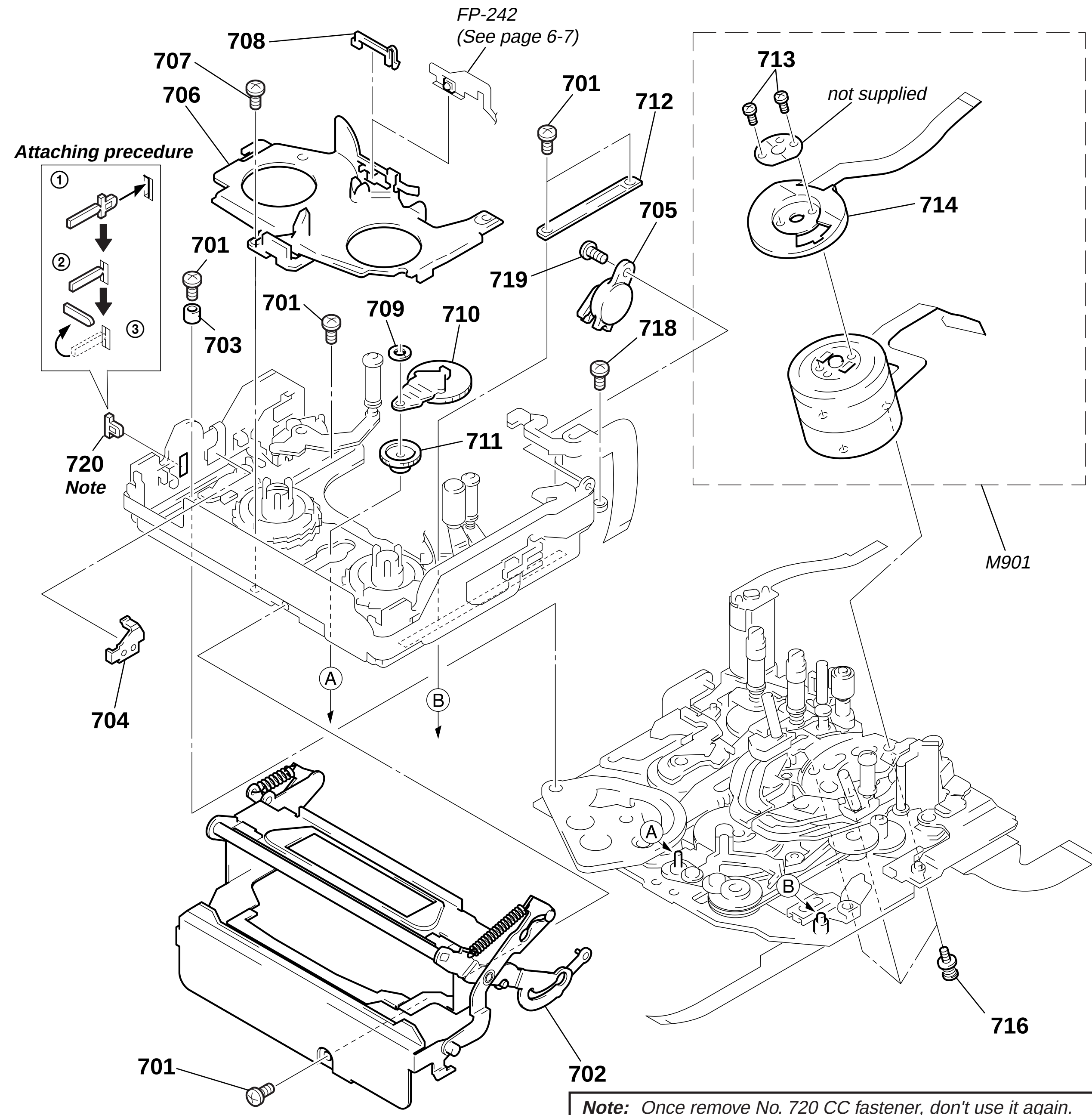


Be sure to read "Note on the CCD Imager replacement" on page 4-10 when changing the CCD Imager.

Ref. No.	Part No.	Description	Remarks
201	8-848-728-01	DEVICE (LSV-620A (SOC)), LENS	
* 202	3-051-226-01	BRACKET (R), LENS	
* 203	3-051-779-01	SHEET METAL, MF FITTING	
* 204	3-051-225-01	BRACKET (L), LENS	
205	3-052-528-01	SCREW (M1.7)	
206	A-7030-881-A	CCD BLOCK ASSY (PC1)	
206	A-7030-885-A	CCD BLOCK ASSY (PC1E)	
207	3-963-467-11	ADAPTOR (FH), CCD FITTING	
208	1-758-202-21	FILTER BLOCK, OPTICAL	
209	3-961-192-01	RUBBER (FH), SEAL	
* 210	3-051-220-01	FRAME, CD	
211	A-7073-672-A	CD-203 BOARD, COMPLETE	
212	3-318-203-12	SCREW (B1.7), TAPPING	
213	3-973-497-41	SCREW (M1.7), 0-NO. +P 2	
214	A-7073-673-A	VF-125 BOARD, COMPLETE	
215	X-3948-876-1	SLEEVE ASSY, VF	
216	3-051-221-01	RING, VF REGULATION	
217	X-3948-875-1	LENS ASSY, VF	
* 218	3-051-426-01	SPACER (A), VF	
* 219	3-051-427-01	SPACER (B), VF	
220	3-051-222-01	BRACKET, BL	
221	3-052-285-01	SHEET, VF PROTECTION	
222	3-713-791-01	SCREW (M1.7X4), TAPPING, P2	
223	3-973-497-61	SCREW (M1.7), 0-NO. +P 2	
* 224	3-052-196-01	SHEET, LENS FLEXIBLE	
* 225	3-052-414-01	SHEET, LENS PROTECTION	
* 226	3-052-466-01	CUSHION, VF FLEXIBLE	
* 227	3-052-481-01	SHEET, FLEXIBLE PROTECTION	
* 228	3-052-522-01	SHEET, ADHESIVE	
LCD902	8-753-023-51	LCX027AK-1	
⚠ND902	1-475-980-11	BLOCK, LIGHT GUIDE PLATE	

Note :	**Note :**
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

6-1-6. CASSETTE COMPARTMENT AND DRUM ASSEMBLY


708
707
706
FP-242
(See page 6-7)
701
712
713
not supplied
714
Attaching precedure
①
②
③
705
701
719
701
709
710
718
703
711
720
Note
M901
A
B
704
A
B
716
701
702

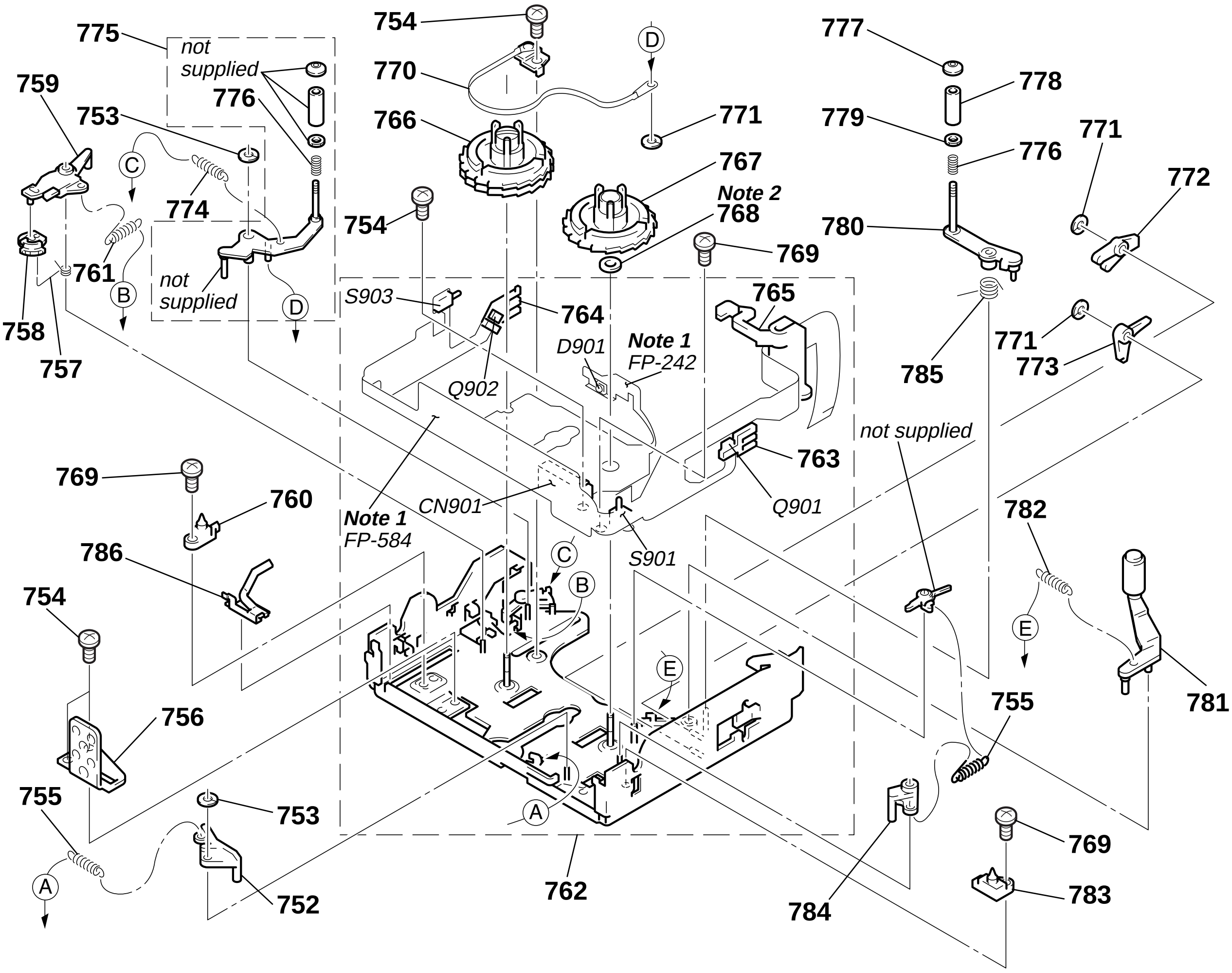
Note: *Once remove No. 720 CC fastener, don't use it again.*
Be sure to replace it with new one.
(Attaching procedure is as shown above figure.)

Ref. No.	Part No.	Description	Remarks
701	3-728-103-11	SCREW (M1.4X1.6)	
702	X-3947-480-1	CASSETTE COMPARTMENT ASSY	
703	3-748-703-01	COLLAR	
* 704	3-976-449-02	COVER, CC SWITCH	
705	3-976-446-01	DAMPER	
706	X-3748-613-3	BASE ASSY, LED	
707	3-704-197-21	SCREW (M1.4X2.5), LOCKING	
708	3-748-683-01	HOLDER, LED	
709	3-315-414-31	WASHER	
710	X-3748-609-2	GOOSENECK ASSY	
711	3-748-736-01	GEAR, RELAY	
712	3-748-702-02	SLIDER, CAM	
713	3-962-914-01	SCREW (M1.4X2)	
714	X-3944-897-2	MOTOR FPC ASSY	
716	A-7026-009-B	SCREW ASSY, DRUM FITTING	
718	3-703-816-42	SCREW (M1.4X2.5), SPECIAL HEAD	
719	3-962-346-01	SCREW (M1.6)	
* 720	3-979-009-03	FASTENER, CC	
M901	A-7048-887-A	DRUM ASSY (DEH-11B-R)	

6-1-7. LS CHASSIS BLOCK SECTION

Note 1: About FP-242 and FP-584
The FP-242 and FP-584 flexible boards are installed to a chassis with a hot press, which are included in the Ref. No. 762 chassis (D2) assy, LS block section, They are not supplied separately because the high precision for installation is needed.

Note 2: Selecting the T washer
Select proper parts for the Ref. No. 768 T washer according to “Height adjustment for T reel table assembly” on page 23 in the “DV MECHANICAL ADJUSTMENT MANUAL Ⅰ” (9-973-815-11).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Note 2
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S903
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D901
Note 1
FP-242
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Q902
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not supplied
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CN901
Q901
Note 1
FP-584
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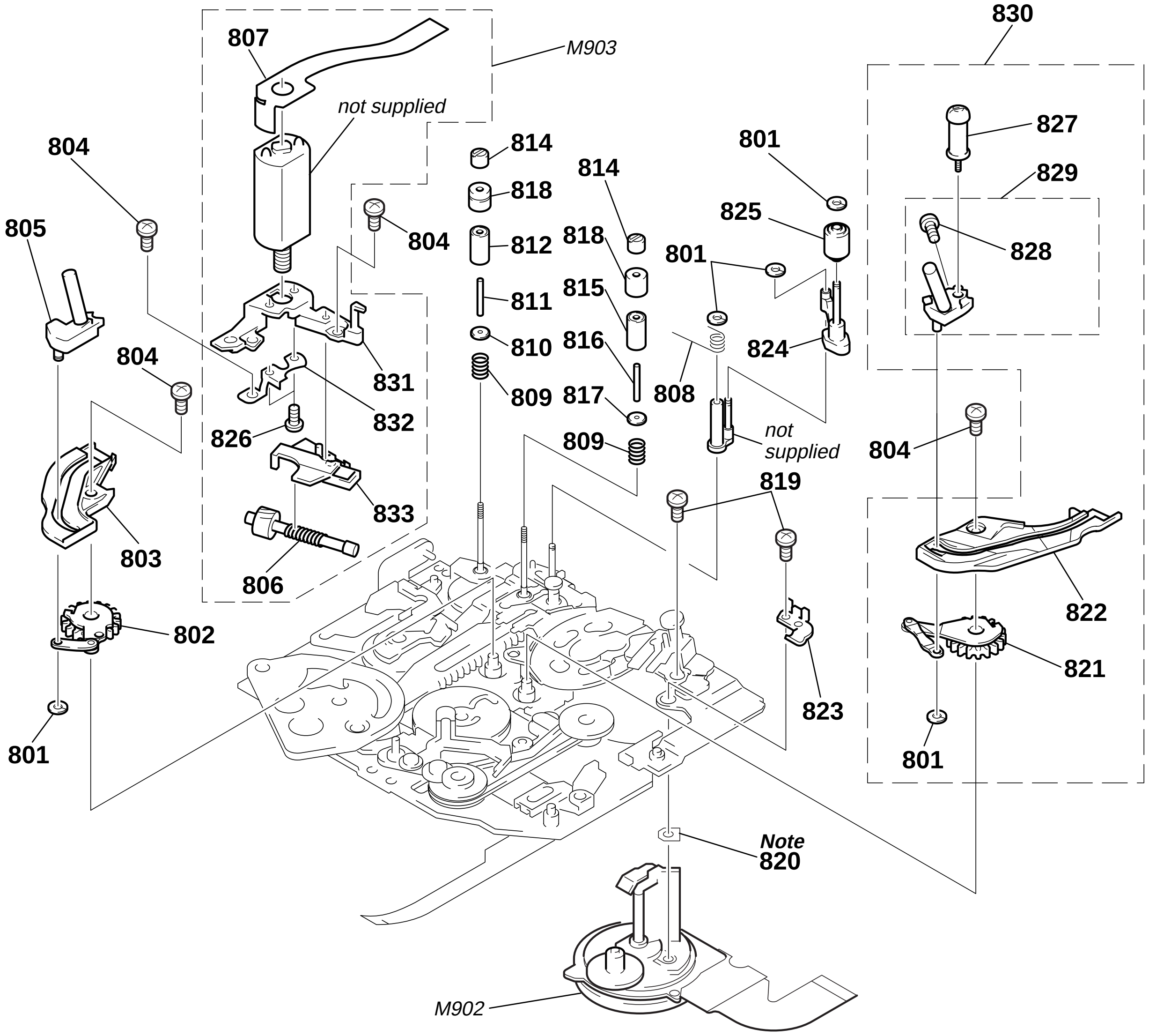
Ref. No.	Part No.	Description	Remarks
752	3-748-775-03	BRAKE, RVS	
753	3-315-414-31	WASHER	
754	3-972-669-01	SCREW (M1.4X1.6)	
755	3-748-776-01	SPRING, TENSION	
756	3-748-681-01	PLATE, LS CAM	
757	3-748-774-01	SPRING, TORSION	
758	3-748-773-04	HARD, S	
759	3-748-815-02	ARM, S BRAKE	
760	3-748-677-01	POSITIONING, S	
761	3-968-656-01	SPRING, TENSION	
762	A-7026-025-A	CHASSIS (D2) ASSY, LS	
763	3-976-158-01	SENSOR, HOLDER, T	
764	3-976-644-01	SENSOR, HOLDER, S	
765	3-976-824-01	HOLDER, FPC	
766	X-3748-614-2	TABLE ASSY, REEL, S	
767	X-3748-615-2	TABLE ASSY, REEL, T	
768	3-748-682-01	WASHER, T (t:0.25,GREEN)	
768	3-748-682-11	WASHER, T (t:0.1,YELLOW)	
768	3-748-682-21	WASHER, T (t:0.35,BLACK)	
769	3-703-816-42	SCREW (M1.4X2.5), SPECIAL HEAD	
770	X-3748-618-2	BAND ASSY, TENSION REGULATOR	
771	3-315-384-11	WASHER, STOPPER	
772	3-748-680-01	FOLLOWER, SLIDER	
773	3-748-679-01	LEVER, LOCK	
774	3-748-822-02	SPRING, EXTENSION	
775	A-7026-020-B	ARM BLOCK ASSY,	
776	3-940-891-01	SPRING, COMPRESSION	
777	3-966-194-01	FLANGE, TG7 UPPER	
778	3-748-777-02	TG7	
779	3-964-614-01	FLANGE, TG7 LOWER	
780	X-3748-616-2	ARM ASSY, TG7	
781	X-3748-630-2	ARM ASSY, PINCH	
782	3-748-603-01	SPRING, TENSION	
783	3-748-678-01	POSITIONING, T	
784	3-748-778-02	BRAKE, T HARD	
785	3-748-675-01	SPRING, TORSION	
786	3-973-067-01	SPRING,CASSETTE COMPARTMENT UP	
CN901	1-770-312-11	CONNECTOR 4P	
D901	8-719-050-98	DIODE LN57.SO	
Q901	8-729-028-71	TRASISTER PN166.SO	
Q902	8-729-028-71	TRASISTER PN166.SO	
S901	1-762-351-11	SWITCH, PUSH (1 KEY) (REC PROOF)	
S903	1-572-467-21	SWITCH, PUSH (1 KEY) (CC DOWN)	

6-1-8. MECHANISM CHASSIS BLOCK SECTION-1

Note: Be sure to remember the installed position (one of two position), direction and thickness of the Ref. No. 820 (head spacer) when the M902 (capstan motor)is removed. Refer to “3-9. Capstan motor” on page 15 in the “DV MECHANICAL ADJUSTMENT MANUAL Ⅰ” (9-973-815-11) for details. The thickness of head spacer is normally 100 µm. If it is lost, two 50 µm head spacers will be needed. Be careful not to loose it.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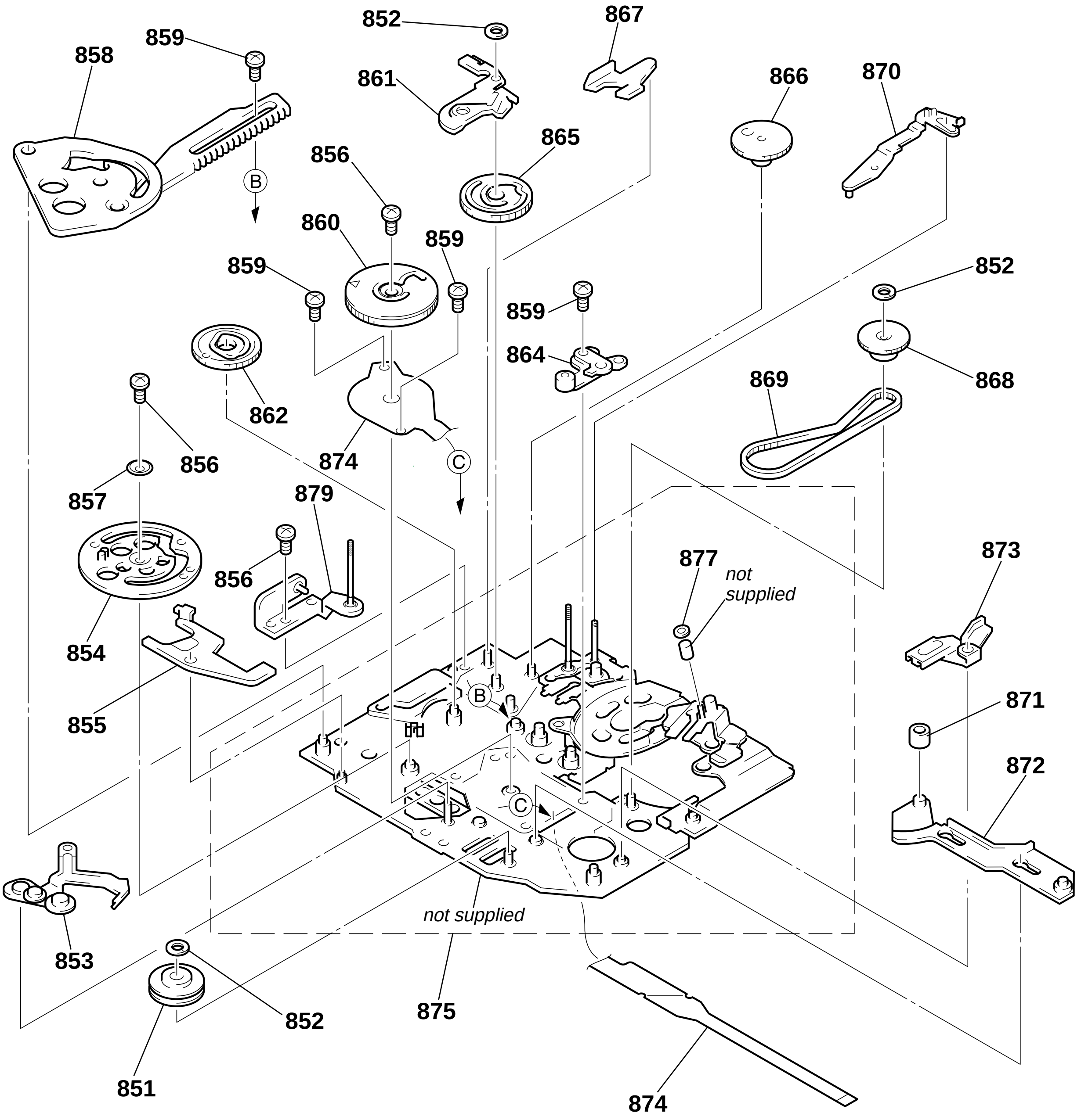
M902

Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
801	3-315-414-31	WASHER		819	3-972-669-01	SCREW (M1.4X1.6)	
802	X-3748-623-1	GL (S) ASSY		820	3-727-843-16	HEAD SPACER(FOR CORRECTION)(t:50um)note	
803	3-748-600-02	RAIL (S)		821	X-3748-624-1	GL (T) ASSY	
804	3-703-816-71	SCREW (M1.4X3.0), SPECIAL HEAD		822	3-748-601-02	RAIL (T)	
805	X-3748-622-2	COASTER (S) ASSY		823	3-964-430-01	SPRING, LS RETAINER	
806	X-3748-633-1	SHAFT ASSY, WORM		824	X-3748-628-2	SLIDE ASSY, HC	
807	1-666-102-11	FP-586 FLEXIBLE		825	A-7026-006-A	ROLLER ASSY, HC	
808	3-748-742-02	SPRING, TORSION		826	3-947-504-01	SCREW (M1.2X2), SPECIAL, 0	
809	3-966-107-01	SPRING, COMPRESSION		827	X-3748-626-3	TG5 ASSY	
810	3-966-105-01	FLANGE, TG1 LOWER		828	3-965-211-01	SCREW (M1)	
811	3-050-519-01	SLEEVE, TG13		829	X-3948-052-1	COASTER (T) ASSY	
812	3-966-099-01	ROLLER, TG13		830	A-7026-002-A	GL (T) BLOCK ASSY	
814	3-966-101-01	NUT, TG13		* 831	3-976-463-01	HOLDER (DIA. 8), MOTOR	
815	3-966-099-11	ROLLER, TG13		* 832	3-964-429-01	COVER, WHEEL	
816	3-050-519-11	SLEEVE, TG13		* 833	3-976-464-01	HOLDER (DIA. 8), SHAFT	
817	3-966-106-01	FLANGE, TG3 LOWER		M902	8-835-524-04	MOTOR, DC SCD-0101A (CAPSTAN)	
818	3-973-948-01	FLANGE (2), TG13 UPPER		M903	A-7010-673-A	ASSY, LM MOTOR (LOADING)	

6-1-9. MECHANISM CHASSIS BLOCK SECTION-2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not supplied
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Ref. No.	Part No.	Description	Remarks
851	X-3945-640-1	PULLEY ASSY, RELAY	
852	3-315-414-31	WASHER	
853	X-3748-600-1	ARM ASSY, COMPULSION	
854	X-3748-605-1	CAM (S) ASSY	
855	3-976-452-01	LEVER, EJECT	
856	3-703-816-42	SCREW (M1.4X2.5), SPECIAL HEAD	
857	3-976-460-01	SPACER, CAM (S)	
858	X-3748-602-2	ARM ASSY, LS	
859	3-728-103-11	SCREW (M1.4X1.6)	
860	X-3748-604-1	CAM ASSY, MODE	
861	3-748-739-02	RETAINER, GEAR	
862	3-748-740-03	GEAR, NO.3	
864	X-3748-627-1	ARM ASSY, ADJUSTMENT	
865	3-748-738-02	GEAR, NO.2	
866	3-748-741-03	GEAR, NO.1	
867	3-748-731-02	ARM, POSITION	
868	X-3945-639-1	PULLEY ASSY, CONVERSION	
869	3-748-734-01	BELT, RELAY	
870	3-974-501-01	ARM (2), RVS STOPPER	
871	3-728-109-01	ROLLER, LS	
872	3-748-647-01	SLIDER, MODE	
873	3-748-733-01	ARM, PINCH RELEASE	
874	1-666-101-11	FP-585 FLEXIBLE BOARD	
875	A-7026-023-B	CHASSIS SUB BLOCK ASSY	
877	4-943-288-01	WASHER	
879	X-3748-606-4	BASE ASSY, TG1	

6-2. ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- Items marked “*” are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- CAPACITORS:
  uF: μF
- RESISTORS
  All resistors are in ohms.
  METAL: metal-film resistor
  METAL OXIDE: Metal Oxide-film resistor
  F: nonflammable
- COILS
  uH: μH
- SEMICONDUCTORS
  In each case, u: μ, for example:
  uA...: μA... , uPA... , μPA... ,
  uPB... , μPB... , uPC... , μPC... ,
  uPD..., μPD...

When indicating parts by reference number, please include the board name.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	Description			Remarks
	A-7073-672-A	CD-203 BOARD, COMPLETE **********************			
		(Ref. No.:4,000 Series) (IC450 is not included to mountred board)			
		< CAPACITOR >			
C450	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C451	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V
C452	1-125-841-91	TANTAL. CHIP	22uF	20%	4V
C453	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C454	1-125-841-91	TANTAL. CHIP	22uF	20%	4V
C455	1-164-850-11	CERAMIC CHIP	10PF	0.5PF	16V
C456	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C457	1-125-841-91	TANTAL. CHIP	22uF	20%	4V
C458	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
* C459	1-119-923-81	CERAMIC CHIP	0.047uF	10%	10V
* C460	1-119-923-81	CERAMIC CHIP	0.047uF	10%	10V
C462	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C465	1-107-820-11	CERAMIC CHIP	0.1uF		16V
* C467	1-119-923-81	CERAMIC CHIP	0.047uF	10%	10V
C468	1-113-990-11	TANTAL. CHIP	15uF	20%	16V
* C469	1-119-923-81	CERAMIC CHIP	0.047uF	10%	10V
C471	1-125-817-11	CERAMIC CHIP	10uF	10%	6.3V
C472	1-125-817-11	CERAMIC CHIP	10uF	10%	6.3V
C473	1-125-817-11	CERAMIC CHIP	10uF	10%	6.3V
C474	1-125-817-11	CERAMIC CHIP	10uF	10%	6.3V
C475	1-110-501-11	CERAMIC CHIP	0.33uF	10%	16V
C476	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C477	1-125-841-91	TANTAL. CHIP	22uF	20%	4V
		< CONNECTOR >			
CN450	1-750-360-21	CONNECTOR, FFC/FPC (ZIF) 24P			
CN451	1-778-592-21	CONNECTOR, BOARD TO BOARD 50P			
		< IC >			
IC450	A-7030-881-A	CCD BLOCK ASSY (CCD IMAGER) (PC1)			
IC450	A-7030-885-A	CCD BLOCK ASSY (CCD IMAGER) (PC1E)			
IC451	8-759-489-19	IC uPC6756GR-8JG-E2			
		< COIL >			
L450	1-414-757-11	INDUCTOR 100uH			
L451	1-414-771-91	INDUCTOR CHIP 10uH			
		< TRANSISTOR >			
Q450	8-729-117-73	TRANSISTOR 2SC4178-F13F14-T1			

Ref. No.	Part No.	Description			Remarks
		< RESISTOR >			
R451	1-218-990-11	SHORT 0			
R452	1-218-969-11	RES,CHIP	22K	5%	1/16W
R453	1-218-990-11	SHORT 0			
R454	1-218-959-11	RES,CHIP	3.3K	5%	1/16W
R455	1-218-969-11	RES,CHIP	22K	5%	1/16W
R456	1-218-969-11	RES,CHIP	22K	5%	1/16W
R457	1-218-969-11	RES,CHIP	22K	5%	1/16W
R458	1-218-965-11	RES,CHIP	10K	5%	1/16W
R459	1-218-965-11	RES,CHIP	10K	5%	1/16W
R460	1-218-989-11	RES,CHIP	1M	5%	1/16W
R461	1-218-967-11	RES,CHIP	15K	5%	1/16W
R462	1-218-989-11	RES,CHIP	1M	5%	1/16W
R463	1-218-941-11	RES,CHIP	100	5%	1/16W
R464	1-218-990-11	SHORT 0			
R465	1-218-990-11	SHORT 0			
R466	1-218-990-11	SHORT 0			
R467	1-218-990-11	SHORT 0			
		< SENSOR >			
SE450	1-803-042-31	SENSOR, ANGULAR VELOCITY (YAW)			
SE451	1-801-731-81	SENSOR, ANGULAR VELOCITY (PITCH)			
	A-7073-669-A	DD-111 BOARD, COMPLETE **********************			
		(Ref. No.:10,000 Series)			
		< CAPACITOR >			
C3201	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
* C3202	1-119-923-81	CERAMIC CHIP	0.047uF	10%	10V
* C3204	1-119-923-81	CERAMIC CHIP	0.047uF	10%	10V
C3206	1-125-840-91	TANTALUM	10uF	20%	6.3V
C3207	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C3208	1-125-840-91	TANTALUM	10uF	20%	6.3V
C3209	1-164-874-11	CERAMIC CHIP	100PF	5%	16V
C3210	1-113-682-11	TANTAL. CHIP	33uF	20%	10V
C3211	1-164-941-11	CERAMIC CHIP	0.0047uF	10%	16V
C3212	1-164-939-11	CERAMIC CHIP	0.0022uF	10%	16V
C3213	1-113-682-11	TANTAL. CHIP	33uF	20%	10V
C3215	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C3216	1-164-941-11	CERAMIC CHIP	0.0047uF	10%	16V
C3217	1-164-941-11	CERAMIC CHIP	0.0047uF	10%	16V
C3218	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V

Ref. No.	Part No.	Description			Remarks
C3219	1-164-941-11	CERAMIC CHIP	0.0047uF	10%	16V
C3220	1-164-874-11	CERAMIC CHIP	100PF	5%	16V
C3221	1-107-682-11	CERAMIC CHIP	1uF	10%	16V
C3222	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V
C3223	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V
C3224	1-164-939-11	CERAMIC CHIP	0.0022uF	10%	16V
C3225	1-164-939-11	CERAMIC CHIP	0.0022uF	10%	16V
C3226	1-164-939-11	CERAMIC CHIP	0.0022uF	10%	16V
C3227	1-164-939-11	CERAMIC CHIP	0.0022uF	10%	16V
C3228	1-164-940-11	CERAMIC CHIP	0.0033uF	10%	16V
C3229	1-164-939-11	CERAMIC CHIP	0.0022uF	10%	16V
C3230	1-164-939-11	CERAMIC CHIP	0.0022uF	10%	16V
C3232	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V
C3233	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V
C3234	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V
C3235	1-125-817-11	CERAMIC CHIP	10uF	10%	6.3V
C3238	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V
C3239	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V
C3240	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V
C3241	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V
C3242	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V
C3243	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V
C3245	1-109-994-11	CERAMIC CHIP	2.2uF	10%	10V
C3246	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C3247	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C3251	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C3252	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C3253	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C3256	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C3257	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C3258	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C3267	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C3268	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V
C3269	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C3270	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V
C3271	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V
C3272	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V
C3273	1-113-987-11	TANTAL. CHIP	4.7uF	20%	25V
C3274	1-107-686-11	TANTAL. CHIP	4.7uF	20%	16V
C3275	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C3276	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V
C3277	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V
* C3284	1-119-923-81	CERAMIC CHIP	0.047uF	10%	10V
		< CONNECTOR >			
CN3200	1-778-595-21	CONNECTOR, BOARD TO BOARD 20P			
CN3201	1-778-593-21	CONNECTOR, BOARD TO BOARD 60P			
CN9900	1-778-506-21	PIN, CONNECTOR (PC BOARD) 2P			
		< DIODE >			
D3205	8-719-066-34	DIODE RB461F-T106			
D3206	8-719-066-34	DIODE RB461F-T106			
D3207	8-719-066-34	DIODE RB461F-T106			
D3209	8-719-066-16	DIODE RB491D-T146			
D3210	8-719-066-16	DIODE RB491D-T146			
D3212	8-719-066-16	DIODE RB491D-T146			
D3213	8-719-027-77	DIODE MA796-TX			
D3215	8-719-066-16	DIODE RB491D-T146			
D3221	8-719-056-48	DIODE 1SS388(TPL3)			
D3222	8-719-066-34	DIODE RB461F-T106			

Ref. No.	Part No.	Description	Remarks
D3223	8-719-056-61	DIODE MAZS082008SO	
D3224	8-719-056-57	DIODE MAZS091008SO	
D3225	8-719-056-57	DIODE MAZS091008SO	
D3226	8-719-056-57	DIODE MAZS091008SO	
D9901	8-719-045-87	DIODE MA4Z082WA-(TX).SO	
D9903	8-719-045-87	DIODE MA4Z082WA-(TX).SO	
D9905	8-719-056-61	DIODE MAZS082008SO	
D9906	8-719-056-61	DIODE MAZS082008SO	
		< FUSE >	
⚠F3202	1-533-981-11	FUSE, MICRO	
⚠F3203	1-533-981-11	FUSE, MICRO	
⚠F3204	1-533-981-11	FUSE, MICRO	
⚠F3205	1-533-981-11	FUSE, MICRO	
		< IC >	
IC3200	8-759-491-09	IC MB4488PFV-G-BND-ER	
		< JACK >	
J9900	1-691-737-11	JACK (SMALL TYPE) (MIC (PLUG IN POWER))	
J9901	1-778-518-11	CONNECTOR, EXTERNAL (S VIDEO)	
J9902	1-778-040-11	JACK, SMALL TYPE (AUDIO/VIDEO)	
J9903	1-565-276-31	JACK, ULTRA SMALL 1P (LANK)	
		< COIL >	
L3204	1-416-346-11	INDUCTOR 33uH	
L3205	1-416-346-11	INDUCTOR 33uH	
L3206	1-416-705-21	INDUCTOR 22uH	
L3207	1-416-345-11	INDUCTOR 22uH	
L3208	1-416-727-21	INDUCTOR 22uH	
L3209	1-416-345-11	INDUCTOR 22uH	
L3210	1-414-770-91	INDUCTOR CHIP 4.7uH	
L3212	1-414-396-21	INDUCTOR 4.7uH	
L3213	1-414-770-91	INDUCTOR CHIP 4.7uH	
L3214	1-414-770-91	INDUCTOR CHIP 4.7uH	
L3215	1-414-770-91	INDUCTOR CHIP 4.7uH	
L3216	1-414-770-91	INDUCTOR CHIP 4.7uH	
L3217	1-414-770-91	INDUCTOR CHIP 4.7uH	
L3218	1-414-396-21	INDUCTOR 4.7uH	
L3219	1-416-668-11	INDUCTOR 10uH	
L3220	1-416-668-11	INDUCTOR 10uH	
L3221	1-416-668-11	INDUCTOR 10uH	
L3222	1-416-668-11	INDUCTOR 10uH	
L3223	1-414-396-21	INDUCTOR 4.7uH	
L3226	1-414-770-91	INDUCTOR CHIP 4.7uH	
L3227	1-414-770-91	INDUCTOR CHIP 4.7uH	
L3228	1-414-770-91	INDUCTOR CHIP 4.7uH	
		< TRANSISTOR >	
Q3206	8-729-822-05	TRANSISTOR 2SD1622-ST-TD	
Q3207	8-729-037-53	TRANSISTOR 2SA1832F-Y/GR(TPL3)	
Q3208	8-729-043-60	TRANSISTOR CPH6102-TL	
Q3209	8-729-043-94	TRANSISTOR CPH3106-PM-TL	
Q3210	8-729-044-33	TRANSISTOR CPH6701-TL	

Note :	**Note :**
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	Description	Remarks
Q3211	8-729-043-94	TRANSISTOR CPH3106-PM-TL	
Q3212	8-729-043-94	TRANSISTOR CPH3106-PM-TL	
Q3213	8-729-044-33	TRANSISTOR CPH6701-TL	
Q3214	8-729-043-94	TRANSISTOR CPH3106-PM-TL	
Q3218	8-729-041-24	TRANSISTOR NDS355AN	
Q3220	8-729-041-24	TRANSISTOR NDS355AN	
Q3221	8-729-041-24	TRANSISTOR NDS355AN	
Q3222	8-729-041-24	TRANSISTOR NDS355AN	
Q3223	8-729-041-24	TRANSISTOR NDS355AN	
Q3224	8-729-041-24	TRANSISTOR NDS355AN	
Q3252	8-729-037-74	TRANSISTOR UN9213J-(K8).SO	
Q3253	8-729-037-52	TRANSISTOR 2SC4738F-Y/GR(TPL3)	
Q3254	8-729-037-53	TRANSISTOR 2SA1832F-Y/GR(TPL3)	
		< RESISTOR >	
R3204	1-218-953-11	RES,CHIP 1K 5%	1/16W
R3207	1-218-965-11	RES,CHIP 10K 5%	1/16W
R3209	1-208-715-11	RES,CHIP 22K 0.50%	1/16W
R3214	1-218-973-11	RES,CHIP 47K 5%	1/16W
R3217	1-218-971-11	RES,CHIP 33K 5%	1/16W
R3218	1-218-969-11	RES,CHIP 22K 5%	1/16W
R3220	1-208-927-11	RES,CHIP 47K 0.50%	1/16W
R3221	1-218-965-11	RES,CHIP 10K 5%	1/16W
R3222	1-218-974-11	RES,CHIP 56K 5%	1/16W
R3223	1-208-713-11	RES,CHIP 18K 0.50%	1/16W
R3224	1-218-967-11	RES,CHIP 15K 5%	1/16W
R3225	1-218-972-11	RES,CHIP 39K 5%	1/16W
R3226	1-218-974-11	RES,CHIP 56K 5%	1/16W
R3230	1-218-965-11	RES,CHIP 10K 5%	1/16W
R3231	1-208-927-11	RES,CHIP 47K 0.50%	1/16W
R3232	1-218-965-11	RES,CHIP 10K 5%	1/16W
R3233	1-208-715-11	RES,CHIP 22K 0.50%	1/16W
R3234	1-218-965-11	RES,CHIP 10K 5%	1/16W
R3235	1-208-713-11	RES,CHIP 18K 0.50%	1/16W
R3236	1-218-964-11	RES,CHIP 8.2K 5%	1/16W
R3237	1-208-927-11	RES,CHIP 47K 0.50%	1/16W
R3238	1-218-974-11	RES,CHIP 56K 0.50%	1/16W
R3239	1-218-973-11	RES,CHIP 47K 5%	1/16W
R3240	1-208-939-11	RES,CHIP 150K 0.50%	1/16W
R3241	1-218-940-11	RES,CHIP 82 5%	1/16W
R3242	1-218-953-11	RES,CHIP 1K 5%	1/16W
R3243	1-208-701-11	RES,CHIP 5.6K 0.50%	1/16W
R3244	1-218-966-11	RES,CHIP 12K 5%	1/16W
R3245	1-218-974-11	RES,CHIP 56K 0.50%	1/16W
R3248	1-218-937-11	RES,CHIP 47 5%	1/16W
R3249	1-218-939-11	RES,CHIP 68 5%	1/16W
R3252	1-218-940-11	RES,CHIP 82 5%	1/16W
R3253	1-218-937-11	RES,CHIP 47 5%	1/16W
R3255	1-218-936-11	RES,CHIP 39 5%	1/16W
R3256	1-218-942-11	RES,CHIP 120 5%	1/16W
R3264	1-218-981-11	RES,CHIP 220K 5%	1/16W
R3265	1-218-953-11	RES,CHIP 1K 5%	1/16W
R3266	1-218-957-11	RES,CHIP 2.2K 5%	1/16W
R3267	1-218-961-11	RES,CHIP 4.7K 5%	1/16W
R3269	1-218-990-11	SHORT 0	
R3270	1-218-990-11	SHORT 0	
R3272	1-218-973-11	RES,CHIP 47K 5%	1/16W
R3274	1-218-990-11	SHORT 0	
R3275	1-218-990-11	SHORT 0	
R3278	1-218-990-11	SHORT 0	
R3283	1-218-965-11	RES,CHIP 10K 5%	1/16W
R3284	1-218-990-11	SHORT 0	
R3285	1-218-989-11	RES,CHIP 1M 5%	1/16W
R3286	1-216-864-11	METAL CHIP 0 5%	1/16W
R3287	1-218-959-11	RES,CHIP 3.3K 5%	1/16W
R9900	1-500-444-11	FERRITE 0UH	
R9901	1-500-444-11	FERRITE 0UH	
R9902	1-500-444-11	FERRITE 0UH	
R9903	1-216-864-11	METAL CHIP 0 5%	1/16W
R9914	1-216-864-11	METAL CHIP 0 5%	1/16W
R9915	1-216-864-11	METAL CHIP 0 5%	1/16W
R9916	1-216-864-11	METAL CHIP 0 5%	1/16W
R9933	1-500-444-11	FERRITE 0UH	
R9934	1-500-444-11	FERRITE 0UH	
R9935	1-500-444-11	FERRITE 0UH	
R9936	1-500-444-11	FERRITE 0UH	
R9937	1-500-444-11	FERRITE 0UH	
R9938	1-216-864-11	METAL CHIP 0 5%	1/16W
		< TRANSFORMER >	
T3200	1-431-958-11	TRANSFORMER, DC/DC CONVERTER	
T3201	1-431-997-21	TRANSFORMER, DC/DC CONVERTER	
		< VARISTOR >	
VDR983	1-801-923-11	VARISTOR, CHIP	
VDR984	1-801-923-11	VARISTOR, CHIP	
VDR987	1-801-862-11	VARISTOR, CHIP	
VDR988	1-801-923-11	VARISTOR, CHIP	
VDR989	1-801-862-11	VARISTOR, CHIP	

FP-242 BOARD, COMPLETE (Not supplied)
****

(Ref. No.:10,000 Series)

Ref. No.	Part No.	Description	Remarks
	3-976-458-01	HOLDER (T), SENSOR	
	3-976-644-01	SENSOR, HOLDER, S	
	3-976-824-01	HOLDER, FPC	
		< RESISTOR >	
R901	1-216-807-11	METAL CHIP 68 5%	1/16W
R902	1-216-807-11	METAL CHIP 68 5%	1/16W
R903	1-216-807-11	METAL CHIP 68 5%	1/16W
R904	1-216-807-11	METAL CHIP 68 5%	1/16W
		< HALL ELEMENT >	
H901	8-719-033-37	ELEMENT, HALL HW-105C	
H902	8-719-033-37	ELEMENT, HALL HW-105C	
		< DIODE >	
D901	8-719-050-98	DIODE LN57.SO	

FP-584 FLEXIBLE BOARD (Not supplied)
****

Ref. No.	Part No.	Description	Remarks
		< SWITCH >	
S901	1-762-351-11	SWITCH, PUSH (1 KEY) (REC PROOF)	
S903	1-572-467-21	SWITCH, PUSH (1 KEY) (CC DOWN)	

Ref. No.	Part No.	Description			Remarks
		< CONNECTOR >			
CN901	1-770-312-11	CONNECTOR 4P			
		< TRANSISTOR >			
Q901	8-729-028-71	TRANSISTOR PN166.SO			
Q902	8-729-028-71	TRANSISTOR PN166.SO			

1-666-102-11 FP-586 FLEXIBLE BOARD
****

A-7073-668-A MR-40 BOARD, COMPLETE
****
(Ref. No.:1,000 Series)

Ref. No.	Part No.	Description			Remarks
		< CAPACITOR >			
C1804	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C1805	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C1807	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C1809	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C1833	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C1834	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C1837	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C1840	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C1844	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C1845	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C1846	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C1850	1-164-866-11	CERAMIC CHIP	47PF	5%	16V
C1852	1-164-677-11	CERAMIC CHIP	0.033uF	10%	16V
C1854	1-164-866-11	CERAMIC CHIP	47PF	5%	16V
C1856	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C1860	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C1869	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C1875	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C1878	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C1881	1-164-935-11	CERAMIC CHIP	470PF	10%	16V
C1884	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C1885	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C1886	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C1887	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C1888	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C1889	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C1890	1-164-935-11	CERAMIC CHIP	470PF	10%	16V
C1901	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C1903	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C1904	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C1909	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C1910	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C1914	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C1915	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C1933	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V
C2500	1-164-941-11	CERAMIC CHIP	0.0047uF	10%	16V
C2501	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C2507	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C2546	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C2550	1-164-739-11	CERAMIC CHIP	560PF	5%	50V
C2551	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C2552	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
* C2553	1-125-837-91	CERAMIC CHIP		10%	6.3V
C2554	1-164-941-11	CERAMIC CHIP	0.0047uF	10%	16V
C2555	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C2556	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C2557	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C2558	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C2559	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C2561	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C2562	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C2563	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C2564	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C2565	1-162-959-11	CERAMIC CHIP	330PF	5%	50V
C2566	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C2567	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C2569	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
* C2570	1-119-923-81	CERAMIC CHIP	0.047uF	10%	10V
C2572	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C2573	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
* C2574	1-119-923-81	CERAMIC CHIP	0.047uF	10%	10V
C2575	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C2576	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C2577	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C2579	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C2582	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C2583	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C2585	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C2586	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C2587	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C2588	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C2589	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C2590	1-164-874-11	CERAMIC CHIP	100PF	5%	16V
C2591	1-164-874-11	CERAMIC CHIP	100PF	5%	16V
		< CONNECTOR >			
CN1810	1-691-374-11	CONNECTOR, FFC/FPC 10P			
CN2501	1-573-927-11	CONNECTOR, FFC/FPC 18P			
CN2502	1-691-381-11	CONNECTOR, FFC/FPC 17P			
CN2503	1-766-341-21	CONNECTOR, FFC/FPC 11P			
CN2504	1-691-483-21	CONNECTOR, FFC/FPC 4P			
CN2505	1-691-370-11	CONNECTOR, FFC/FPC 6P			
CN2506	1-785-281-41	CONNECTOR, BOARD TO BOARD 90P			
CN2507	1-778-506-21	PIN, CONNECTOR (PC BOARD) 2P			
		< DIODE >			
D2500	8-719-056-23	DIODE MA2S111-(K8).SO			
D2501	8-719-061-82	DIODE TLSU1002(TPX1,SONY)			
D2502	8-719-404-49	DIODE MA111-TX			
		< IC >			
IC1814	8-752-086-52	IC CXA2071R-T4			
IC1816	8-752-086-53	IC CXA2072R-T4			
IC1900	8-759-534-27	IC F712504BPM-TEB			
IC2500	8-749-012-25	IC RS-170-TU			
IC2503	8-759-431-30	IC CXA8062R-EB			
IC2504	8-759-385-94	IC CXA8053Q-TE-B			
IC2505	8-759-434-46	IC TA8486F(EL)			

Ref. No.	Part No.	Description			Remarks
		< COIL >			
L1803	1-414-771-91	INDUCTOR CHIP 10uH			
L1804	1-414-771-91	INDUCTOR CHIP 10uH			
L1805	1-414-771-91	INDUCTOR CHIP 10uH			
L1808	1-414-771-91	INDUCTOR CHIP 10uH			
L1811	1-414-771-91	INDUCTOR CHIP 10uH			
L2511	1-414-771-91	INDUCTOR CHIP 10uH			
L2512	1-414-771-91	INDUCTOR CHIP 10uH			
L2513	1-414-770-91	INDUCTOR CHIP 4.7uH			
		< TRANSISTOR >			
Q1801	8-729-037-53	TRANSISTOR 2SA1832F-Y/GR(TPL3)			
Q2505	8-729-037-74	TRANSISTOR UN9213J-(K8).SO			
Q2506	8-729-141-48	TRANSISTOR 2SB624-T1BV4			
Q2507	8-729-037-52	TRANSISTOR 2SC4738F-Y/GR(TPL3)			
Q2508	8-729-037-53	TRANSISTOR 2SA1832F-Y/GR(TPL3)			
Q2509	8-729-037-52	TRANSISTOR 2SC4738F-Y/GR(TPL3)			
		< RESISTOR >			
R1826	1-218-979-11	RES,CHIP	150K	5%	1/16W
R1827	1-218-961-11	RES,CHIP	4.7K	5%	1/16W
R1828	1-218-949-11	RES,CHIP	470	5%	1/16W
R1829	1-218-990-11	SHORT	0		
R1831	1-218-963-11	RES,CHIP	6.8K	5%	1/16W
R1833	1-218-965-11	RES,CHIP	10K	5%	1/16W
R1834	1-218-969-11	RES,CHIP	22K	5%	1/16W
R1835	1-208-910-11	RES,CHIP	9.1K	0.50%	1/16W
R1838	1-218-969-11	RES,CHIP	22K	5%	1/16W
R1839	1-208-910-11	RES,CHIP	9.1K	0.50%	1/16W
R1840	1-218-966-11	RES,CHIP	12K	5%	1/16W
R1843	1-218-831-11	RES,CHIP	220	0.50%	1/16W
R1848	1-218-965-11	RES,CHIP	10K	5%	1/16W
R1852	1-218-961-11	RES,CHIP	4.7K	5%	1/16W
R1855	1-218-831-11	RES,CHIP	220	0.50%	1/16W
R1857	1-218-831-11	RES,CHIP	220	0.50%	1/16W
R1859	1-218-831-11	RES,CHIP	220	0.50%	1/16W
R1869	1-218-966-11	RES,CHIP	12K	5%	1/16W
R1870	1-218-965-11	RES,CHIP	10K	5%	1/16W
R1871	1-218-939-11	RES,CHIP	68	5%	1/16W
R1872	1-218-990-11	SHORT	0		
R1874	1-218-989-11	RES,CHIP	1M	5%	1/16W
R1909	1-218-931-11	RES,CHIP	15	5%	1/16W
R1938	1-218-977-11	RES,CHIP	100K	5%	1/16W
R1939	1-218-990-11	SHORT	0		
R1940	1-218-990-11	SHORT	0		
R1941	1-218-990-11	SHORT	0		
R1942	1-218-990-11	SHORT	0		
R1943	1-218-990-11	SHORT	0		
R1945	1-218-990-11	SHORT	0		
R1947	1-216-864-11	METAL CHIP	0	5%	1/16W
R1951	1-218-990-11	SHORT	0		
R1952	1-218-990-11	SHORT	0		
R2500	1-218-937-11	RES,CHIP	47	5%	1/16W
R2501	1-218-959-11	RES,CHIP	3.3K	5%	1/16W
R2505	1-218-965-11	RES,CHIP	10K	5%	1/16W
R2506	1-208-707-11	RES,CHIP	10K	0.50%	1/16W
R2507	1-218-965-11	RES,CHIP	10K	5%	1/16W
R2508	1-218-965-11	RES,CHIP	10K	5%	1/16W
R2511	1-208-935-11	RES,CHIP	100K	0.50%	1/16W
R2517	1-218-989-11	RES,CHIP	1M	5%	1/16W
R2530	1-218-971-11	RES,CHIP	33K	5%	1/16W
R2531	1-217-671-11	METAL CHIP	1	5%	1/10W
R2532	1-217-671-11	METAL CHIP	1	5%	1/10W
R2533	1-217-671-11	METAL CHIP	1	5%	1/10W
R2534	1-218-940-11	RES,CHIP	82	5%	1/16W
R2546	1-218-979-11	RES,CHIP	150K	5%	1/16W
R2547	1-218-963-11	RES,CHIP	6.8K	5%	1/16W
R2549	1-218-963-11	RES,CHIP	6.8K	5%	1/16W
R2550	1-218-963-11	RES,CHIP	6.8K	5%	1/16W
R2551	1-208-675-11	RES,CHIP	470	0.50%	1/16W
R2552	1-218-965-11	RES,CHIP	10K	5%	1/16W
R2553	1-218-965-11	RES,CHIP	10K	5%	1/16W
R2554	1-218-965-11	RES,CHIP	10K	5%	1/16W
R2556	1-218-978-11	RES,CHIP	120K	0.50%	1/16W
R2557	1-208-953-11	RES,CHIP	560K	0.50%	1/16W
R2558	1-218-953-11	RES,CHIP	1K	5%	1/16W
R2559	1-208-715-11	RES,CHIP	22K	0.50%	1/16W
R2560	1-208-715-11	RES,CHIP	22K	0.50%	1/16W
R2564	1-217-671-11	METAL CHIP	1	5%	1/10W
R2565	1-217-671-11	METAL CHIP	1	5%	1/10W
R2566	1-218-941-11	RES,CHIP	100	5%	1/16W
R2567	1-218-941-11	RES,CHIP	100	5%	1/16W
R2568	1-218-941-11	RES,CHIP	100	5%	1/16W
R2569	1-218-957-11	RES,CHIP	2.2K	5%	1/16W
R2570	1-218-977-11	RES,CHIP	100K	5%	1/16W
R2571	1-218-969-11	RES,CHIP	22K	5%	1/16W
R2572	1-218-965-11	RES,CHIP	10K	5%	1/16W
R2573	1-218-949-11	RES,CHIP	470	5%	1/16W
R2574	1-217-671-11	METAL CHIP	1	5%	1/10W
R2575	1-217-671-11	METAL CHIP	1	5%	1/10W
R2576	1-217-671-11	METAL CHIP	1	5%	1/10W
R2577	1-217-671-11	METAL CHIP	1	5%	1/10W
R2578	1-218-973-11	RES,CHIP	47K	5%	1/16W
R2579	1-218-965-11	RES,CHIP	10K	5%	1/16W
R2582	1-218-961-11	RES,CHIP	4.7K	5%	1/16W
R2583	1-218-965-11	RES,CHIP	10K	5%	1/16W
R2585	1-218-959-11	RES,CHIP	3.3K	5%	1/16W
R2586	1-218-941-11	RES,CHIP	100	5%	1/16W
R2587	1-218-969-11	RES,CHIP	22K	5%	1/16W
R2588	1-218-960-11	RES,CHIP	3.9K	5%	1/16W
R2599	1-217-671-11	METAL CHIP	1	5%	1/10W
R2600	1-218-977-11	RES,CHIP	100K	5%	1/16W
R2601	1-218-965-11	RES,CHIP	10K	5%	1/16W
R2602	1-218-977-11	RES,CHIP	100K	5%	1/16W
R2603	1-218-969-11	RES,CHIP	22K	5%	1/16W
R2604	1-218-957-11	RES,CHIP	2.2K	5%	1/16W
R2605	1-216-864-11	METAL CHIP	0	5%	1/16W

A-7073-671-A PD-102 BOARD, COMPLETE
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(Ref. No.:10,000 Series)

Ref. No.	Part No.	Description			Remarks
		< CAPACITOR >			
C8001	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C8002	1-125-838-91	CERAMIC CHIP	2.2uF	10%	6.3V
C8004	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C8007	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C8008	1-164-939-11	CERAMIC CHIP	0.0022uF	10%	16V

Ref. No.	Part No.	Description			Remarks
C8009	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C8010	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C8011	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C8012	1-125-838-91	CERAMIC CHIP	2.2uF	10%	6.3V
C8013	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C8014	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C8015	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C8016	1-104-915-11	TANTAL. CHIP	2.2uF	20%	20V
C8017	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C8018	1-104-915-11	TANTAL. CHIP	2.2uF	20%	20V
C8019	1-125-838-91	CERAMIC CHIP	2.2uF	10%	6.3V
C8020	1-125-838-91	CERAMIC CHIP	2.2uF	10%	6.3V
C8021	1-125-838-91	CERAMIC CHIP	2.2uF	10%	6.3V
C8022	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C8023	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C8024	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C8025	1-107-686-11	TANTAL. CHIP	4.7uF	20%	16V
C8100	1-125-839-91	TANTAL. CHIP	47uF	20%	6.3V
C8101	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C8102	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C8103	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C8200	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C8201	1-164-942-11	CERAMIC CHIP	0.0068uF	10%	16V
C8202	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C8203	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C8204	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C8205	1-164-858-11	CERAMIC CHIP	22PF	5%	16V
C8206	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C8207	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C8208	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C8209	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C8211	1-104-915-11	TANTAL. CHIP	2.2uF	20%	20V
C8212	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
		< CONNECTOR >			
CN8000	1-785-283-21	PIN, CONNECTOR (PC BOARD) 14P			
* CN8200	1-778-172-11	CONNECTOR, FFC/FPC (ZIF) 24P			
CN8201	1-764-704-21	CONNECTOR, FFC/FPC (LIF) 5P			
		< DIODE >			
D8100	8-719-059-47	DIODE PG1111R-TR			
D8200	8-713-102-80	DIODE 1T369-01-T8A			
D8202	8-719-056-57	DIODE MAZS091008SO			
		< IC >			
* IC8000	8-759-492-57	IC RN5RZ30BA-TL			
IC8001	8-759-524-98	IC CXA8116R-T4			
IC8200	8-759-530-19	IC MB40D001PFV-G-BND-ER			
IC8201	8-752-386-44	IC CXD2446R-T4			
		< COIL >			
L8001	1-414-754-11	INDUCTOR 10uH			
L8002	1-414-754-11	INDUCTOR 10uH			
L8100	1-414-394-11	INDUCTOR 2.2uH			
L8101	1-414-757-11	INDUCTOR 100uH			
L8200	1-414-754-11	INDUCTOR 10uH			
L8201	1-412-947-11	INDUCTOR 4.7uH			
L8202	1-414-757-11	INDUCTOR 100uH			

Ref. No.	Part No.	Description				Remarks
		< TRANSISTOR >				
Q8000	8-729-037-74	TRANSISTOR	UN9213J-(K8).SO			
Q8001	8-729-427-16	TRANSISTOR	XP4113-TXE			
Q8002	8-729-041-23	TRANSISTOR	NDS356AP			
Q8003	8-729-037-53	TRANSISTOR	2SA1832F-Y/GR(TPL3)			
Q8004	8-729-037-52	TRANSISTOR	2SC4738F-Y/GR(TPL3)			
Q8005	8-729-037-53	TRANSISTOR	2SA1832F-Y/GR(TPL3)			
Q8006	8-729-037-52	TRANSISTOR	2SC4738F-Y/GR(TPL3)			
Q8007	8-729-041-23	TRANSISTOR	NDS356AP			
Q8009	8-729-427-74	TRANSISTOR	XP4601-TXE			
Q8010	8-729-427-74	TRANSISTOR	XP4601-TXE			
Q8011	8-729-427-74	TRANSISTOR	XP4601-TXE			
Q8100	8-729-042-59	TRANSISTOR	UN9112J-(K8).SO			
Q8200	8-729-037-74	TRANSISTOR	UN9213J-(K8).SO			
Q8201	8-729-037-74	TRANSISTOR	UN9213J-(K8).SO			
		< RESISTOR >				
R8000	1-218-977-11	RES,CHIP		100K	5%	1/16W
R8001	1-218-989-11	RES,CHIP		1M	5%	1/16W
R8002	1-218-990-11	SHORT	0			
R8003	1-218-989-11	RES,CHIP		1M	5%	1/16W
R8004	1-218-990-11	SHORT	0			
R8005	1-218-990-11	SHORT	0			
R8006	1-218-990-11	SHORT	0			
R8007	1-218-973-11	RES,CHIP		47K	5%	1/16W
R8008	1-218-973-11	RES,CHIP		47K	5%	1/16W
R8009	1-208-935-11	RES,CHIP		100K	0.50%	1/16W
R8010	1-208-715-11	RES,CHIP		22K	0.50%	1/16W
R8011	1-208-721-11	RES,CHIP		39K	0.50%	1/16W
R8012	1-218-989-11	RES,CHIP		1M	5%	1/16W
R8014	1-218-968-11	RES,CHIP		18K	5%	1/16W
R8015	1-218-965-11	RES,CHIP		10K	5%	1/16W
R8016	1-218-977-11	RES,CHIP		100K	5%	1/16W
R8017	1-218-971-11	RES,CHIP		33K	5%	1/16W
R8018	1-218-972-11	RES,CHIP		39K	5%	1/16W
R8019	1-218-985-11	RES,CHIP		470K	5%	1/16W
R8020	1-218-969-11	RES,CHIP		22K	5%	1/16W
R8021	1-218-973-11	RES,CHIP		47K	5%	1/16W
R8022	1-218-961-11	RES,CHIP		4.7K	5%	1/16W
R8023	1-218-961-11	RES,CHIP		4.7K	5%	1/16W
R8024	1-218-969-11	RES,CHIP		22K	5%	1/16W
R8025	1-218-973-11	RES,CHIP		47K	5%	1/16W
R8026	1-218-971-11	RES,CHIP		33K	5%	1/16W
R8027	1-218-972-11	RES,CHIP		39K	5%	1/16W
R8028	1-218-977-11	RES,CHIP		100K	5%	1/16W
R8030	1-218-972-11	RES,CHIP		39K	5%	1/16W
R8031	1-218-941-11	RES,CHIP		100	5%	1/16W
R8032	1-218-941-11	RES,CHIP		100	5%	1/16W
R8033	1-218-941-11	RES,CHIP		100	5%	1/16W
R8034	1-208-715-11	RES,CHIP		22K	0.50%	1/16W
R8035	1-218-982-11	RES,CHIP		270K	0.50%	1/16W
R8036	1-218-959-11	RES,CHIP		3.3K	5%	1/16W
R8037	1-218-981-11	RES,CHIP		220K	5%	1/16W
R8038	1-218-969-11	RES,CHIP		22K	5%	1/16W
R8039	1-218-959-11	RES,CHIP		3.3K	5%	1/16W
R8040	1-218-971-11	RES,CHIP		33K	5%	1/16W
R8042	1-218-990-11	SHORT	0			

Ref. No.	Part No.	Description			Remarks
R8043	1-218-965-11	RES,CHIP	10K	5%	1/16W
R8044	1-218-965-11	RES,CHIP	10K	5%	1/16W
R8100	1-218-941-11	RES,CHIP	100	5%	1/16W
R8200	1-218-977-11	RES,CHIP	100K	5%	1/16W
R8201	1-218-989-11	RES,CHIP	1M	5%	1/16W
R8202	1-218-968-11	RES,CHIP	18K	5%	1/16W
R8205	1-218-961-11	RES,CHIP	4.7K	5%	1/16W
R8206	1-218-971-11	RES,CHIP	33K	5%	1/16W
R8207	1-218-949-11	RES,CHIP	470	5%	1/16W
R8208	1-218-977-11	RES,CHIP	100K	5%	1/16W
R8209	1-218-965-11	RES,CHIP	10K	5%	1/16W
R8210	1-218-965-11	RES,CHIP	10K	5%	1/16W
R8211	1-216-864-11	METAL CHIP	0	5%	1/16W
R8212	1-216-864-11	METAL CHIP	0	5%	1/16W
R8213	1-218-990-11	SHORT 0			
R8214	1-218-990-11	SHORT 0			
R8215	1-218-941-11	RES,CHIP	100	5%	1/16W
R8216	1-218-941-11	RES,CHIP	100	5%	1/16W
R8217	1-218-941-11	RES,CHIP	100	5%	1/16W
R8218	1-218-941-11	RES,CHIP	100	5%	1/16W
R8220	1-218-990-11	SHORT 0			

A-7073-670-A PR-31 BOARD, COMPLETE
****
(Ref. No.:10,000 Series)

< HARNESS >

MTM001	1-959-020-11	HARNESS (PR-61)

< SWITCH >

S7500	1-771-040-21	SWITCH, PUSH (PANEL REVERSE)

1-670-873-11 TB-37 BOARD, COMPLETE
****
(Ref. No.:10,000 Series)

< CONNECTOR >

CN6000	1-778-590-21	CONNECTOR, BOARD TO BOARD 20P

A-7094-009-A VC-210 BOARD, COMPLETE (PC1)
****
A-7073-710-A VC-210 BOARD, COMPLETE (PC1E:AEP,UK)
****
A-7073-711-A VC-210 BOARD, COMPLETE
****
(PC1E:EXCEPT AEP,UK)
(Ref. No.:10,000 Series)

< CAPACITOR >

Ref. No.	Part No.	Description			Remarks
C204	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C205	1-164-506-11	CERAMIC CHIP	4.7uF		16V
C206	1-164-506-11	CERAMIC CHIP	4.7uF		16V
C207	1-115-156-11	CERAMIC CHIP	1uF		10V
C210	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C211	1-125-841-91	TANTAL. CHIP	22uF	20%	4V
C212	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C214	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C215	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C216	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C217	1-115-156-11	CERAMIC CHIP	1uF		10V
C218	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C220	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C221	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C222	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C223	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C224	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
* C225	1-125-837-91	CERAMIC CHIP		10%	6.3V
C226	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C227	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C228	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C229	1-125-839-91	TANTAL. CHIP	47uF	20%	6.3V
C231	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C232	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C233	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C234	1-115-156-11	CERAMIC CHIP	1uF		10V
C235	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
* C236	1-125-837-91	CERAMIC CHIP		10%	6.3V
C237	1-164-346-11	CERAMIC CHIP	1uF		16V
C239	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C240	1-125-841-91	TANTAL. CHIP	22uF	20%	4V
C241	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
* C242	1-119-923-81	CERAMIC CHIP	0.047uF	10%	10V
C243	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
* C244	1-125-837-91	CERAMIC CHIP		10%	6.3V
C245	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C246	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C247	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C248	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C255	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C256	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C257	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C502	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C503	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C504	1-164-941-11	CERAMIC CHIP	0.0047uF	10%	16V
C505	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C506	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C507	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C508	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C509	1-164-935-11	CERAMIC CHIP	470PF	10%	16V
C510	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C511	1-115-467-11	CERAMIC CHIP	0.22uF	10%	10V
C512	1-125-839-91	TANTAL. CHIP	47uF	20%	6.3V
C513	1-113-619-11	CERAMIC CHIP	0.47uF	10%	6.3V
C514	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C515	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C516	1-164-939-11	CERAMIC CHIP	0.0022uF	10%	16V
C518	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
* C519	1-125-837-91	CERAMIC CHIP		10%	6.3V
C520	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C521	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
* C522	1-125-837-91	CERAMIC CHIP		10%	6.3V
C523	1-125-841-91	TANTAL. CHIP	22uF	20%	4V
C1401	1-125-838-91	CERAMIC CHIP	2.2uF	10%	6.3V
C1402	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C1404	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C1405	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
* C1409	1-125-837-91	CERAMIC CHIP		10%	6.3V
* C1418	1-125-837-91	CERAMIC CHIP		10%	6.3V
C1422	1-135-149-21	TANTALUM CHIP	2.2uF	20%	10V

Ref. No.	Part No.	Description			Remarks
C1423	1-125-839-91	TANTAL. CHIP	47uF	20%	6.3V
C1433	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C1436	1-135-149-21	TANTALUM CHIP	2.2uF	20%	10V
C1438	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C1439	1-125-839-91	TANTAL. CHIP	47uF	20%	6.3V
C1449	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C1450	1-125-839-91	TANTAL. CHIP	47uF	20%	6.3V
C1451	1-125-839-91	TANTAL. CHIP	47uF	20%	6.3V
C1503	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C1504	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C1505	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C1506	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C1507	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C1508	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C1509	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C1512	1-125-839-91	TANTAL. CHIP	47uF	20%	6.3V
* C1600	1-119-923-81	CERAMIC CHIP	0.047uF	10%	10V
C1601	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C1602	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C1603	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C1604	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C1606	1-164-850-11	CERAMIC CHIP	10PF	0.5PF	16V
C1607	1-164-850-11	CERAMIC CHIP	10PF	0.5PF	16V
C1609	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C1610	1-164-882-11	CERAMIC CHIP	220PF	5%	16V
C1611	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C1612	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C1613	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C1614	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C1615	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C1616	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C1617	1-125-838-91	CERAMIC CHIP	2.2uF	10%	6.3V
C1618	1-164-882-11	CERAMIC CHIP	220PF	5%	16V
* C1619	1-125-837-91	CERAMIC CHIP		10%	6.3V
C1620	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C1621	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C1622	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C1623	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C2001	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C2002	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C2003	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C2004	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C2005	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C2006	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C2007	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C2008	1-113-619-11	CERAMIC CHIP	0.47uF	10%	6.3V
C2009	1-113-619-11	CERAMIC CHIP	0.47uF	10%	6.3V
C2010	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C2011	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C2012	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C2013	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C2014	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C2015	1-125-841-91	TANTAL. CHIP	22uF	20%	4V
C2016	1-125-841-91	TANTAL. CHIP	22uF	20%	4V
C2017	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C2018	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C2019	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C2020	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C2021	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C2022	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C2023	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C2028	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C2030	1-109-935-11	TANTAL. CHIP	4.7uF	20%	6.3V
C2031	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C2033	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
* C2038	1-125-837-91	CERAMIC CHIP		10%	6.3V
C2040	1-113-619-11	CERAMIC CHIP	0.47uF	10%	6.3V
C2041	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
* C2042	1-125-837-91	CERAMIC CHIP		10%	6.3V
C2044	1-113-619-11	CERAMIC CHIP	0.47uF	10%	6.3V
* C2046	1-125-837-91	CERAMIC CHIP		10%	6.3V
C2049	1-113-619-11	CERAMIC CHIP	0.47uF	10%	6.3V
C2050	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C2051	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C2052	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C2053	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C2054	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C2055	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C2056	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C2057	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C2058	1-164-939-11	CERAMIC CHIP	0.0022uF	10%	16V
C2059	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C2060	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C2061	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C2062	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C2063	1-164-939-11	CERAMIC CHIP	0.0022uF	10%	16V
C2064	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C2065	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
* C2067	1-125-837-91	CERAMIC CHIP		10%	6.3V
C2069	1-113-619-11	CERAMIC CHIP	0.47uF	10%	6.3V
C2070	1-164-874-11	CERAMIC CHIP	100PF	5%	16V
C2071	1-164-874-11	CERAMIC CHIP	100PF	5%	16V
C2072	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C2073	1-113-619-11	CERAMIC CHIP	0.47uF	10%	6.3V
C2074	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C2075	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C2076	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C2206	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C2207	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C2208	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C2210	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C2211	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C2212	1-125-839-91	TANTAL. CHIP	47uF	20%	6.3V
C2213	1-117-920-11	TANTAL. CHIP	10uF	20%	6.3V
C2215	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C2216	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C2217	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C2218	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C2219	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C2220	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C2221	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C2222	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C2223	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C2224	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C2226	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C2227	1-107-819-11	CERAMIC CHIP	0.022uF	10%	16V
C2232	1-164-845-11	CERAMIC CHIP	5PF	0.25PF	16V
C2233	1-164-845-11	CERAMIC CHIP	5PF	0.25PF	16V
C2234	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C2237	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V

Ref. No.	Part No.	Description			Remarks
* C2238	1-125-837-91	CERAMIC CHIP		10%	6.3V
C2400	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C2402	1-164-850-11	CERAMIC CHIP	10PF	0.5PF	16V
C2403	1-164-850-11	CERAMIC CHIP	10PF	0.5PF	16V
C2405	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C2408	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
* C2410	1-125-837-91	CERAMIC CHIP		10%	6.3V
C2900	1-113-985-11	TANTAL. CHIP	10uF	20%	20V
C3401	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C3402	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V
C3403	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C3405	1-164-506-11	CERAMIC CHIP	4.7uF		16V
C3407	1-164-506-11	CERAMIC CHIP	4.7uF		16V
C3409	1-107-819-11	CERAMIC CHIP	0.022uF	10%	16V
C3410	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C3423	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V
C3424	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C3425	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V
C3426	1-107-820-11	CERAMIC CHIP	0.1uF		16V
C3427	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C3428	1-164-506-11	CERAMIC CHIP	4.7uF		16V
C3429	1-164-506-11	CERAMIC CHIP	4.7uF		16V
C3430	1-164-506-11	CERAMIC CHIP	4.7uF		16V
C3431	1-164-506-11	CERAMIC CHIP	4.7uF		16V
C5000	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C5001	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C5002	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C5003	1-135-187-21	TANTAL. CHIP	2.2uF	20%	4V
C5004	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C5005	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C5006	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C5007	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V
C5008	1-107-682-11	CERAMIC CHIP	1uF	10%	16V
C5009	1-109-935-11	TANTAL. CHIP	4.7uF	20%	6.3V
C5010	1-109-935-11	TANTAL. CHIP	4.7uF	20%	6.3V
C5011	1-109-935-11	TANTAL. CHIP	4.7uF	20%	6.3V
C5012	1-107-682-11	CERAMIC CHIP	1uF	10%	16V
C5013	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C5014	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C5015	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C5017	1-109-935-11	TANTAL. CHIP	4.7uF	20%	6.3V
C5018	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C5019	1-164-940-11	CERAMIC CHIP	0.0033uF	10%	16V
C5020	1-164-858-11	CERAMIC CHIP	22PF	5%	16V
C5021	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C5022	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C5023	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C5024	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C5028	1-107-682-11	CERAMIC CHIP	1uF	10%	16V
		< CONNECTOR >			
CN201	1-778-597-21	CONNECTOR, BOARD TO BOARD 50P			
CN1500	1-778-519-11	CONNECTOR, SQUARE TYPE 4P			
CN2001	1-778-507-21	PIN, CONNECTOR (PC BOARD) 4P			
CN2201	1-778-506-21	PIN, CONNECTOR (PC BOARD) 2P			
CN2202	1-750-346-21	CONNECTOR, FFC/EPC (ZIF) 6P			
CN2904	1-778-595-21	CONNECTOR, BOARD TO BOARD 20P			
CN2906	1-785-283-21	PIN, CONNECTOR (PC BOARD) 14P			
CN2908	1-785-282-41	CONNECTOR, BOARD TO BOARD 90P			
CN2909	1-778-598-21	CONNECTOR, BOARD TO BOARD 60P			
CN2910	1-778-595-21	CONNECTOR, BOARD TO BOARD 20P			
CN5000	1-778-595-21	CONNECTOR, BOARD TO BOARD 20P			
		< DIODE >			
D202	8-713-103-84	DIODE 1T379-01-T8A			
D501	8-719-056-23	DIODE MA2S111-(K8).SO			
D1600	8-719-055-86	DIODE KV1470TL1-3			
D2201	8-719-056-61	DIODE MAZS082008SO			
D2203	8-719-056-23	DIODE MA2S111-(K8).SO			
D2206	8-719-056-23	DIODE MA2S111-(K8).SO			
D2207	8-719-421-27	DIODE MA728-TX			
D2208	8-719-421-27	DIODE MA728-TX			
D2209	8-719-056-61	DIODE MAZS082008SO			
D2901	8-719-045-87	DIODE MA4Z082WA-(TX).SO			
D2902	8-719-045-87	DIODE MA4Z082WA-(TX).SO			
D2903	8-719-045-87	DIODE MA4Z082WA-(TX).SO			
D3400	8-719-066-34	DIODE RB461F-T106			
D3401	8-719-056-57	DIODE MAZS091008SO			
D5000	8-713-102-80	DIODE 1T369-01-T8A			
		< INDUCTOR >			
FB201	1-216-864-11	METAL CHIP	0	5%	1/16W
FB202	1-216-864-11	METAL CHIP	0	5%	1/16W
FB203	1-216-864-11	METAL CHIP	0	5%	1/16W
FB204	1-414-228-11	INDUCTOR CHIP	0UH		
FB205	1-216-864-11	METAL CHIP	0	5%	1/16W
FB206	1-216-864-11	METAL CHIP	0	5%	1/16W
FB207	1-216-864-11	METAL CHIP	0	5%	1/16W
FB209	1-216-864-11	METAL CHIP	0	5%	1/16W
FB1601	1-216-864-11	METAL CHIP	0	5%	1/16W
FB1602	1-216-864-11	METAL CHIP	0	5%	1/16W
		< IC >			
IC201	8-759-387-31	IC TC75S55F(TE85R)			
IC202	8-752-386-72	IC CXD2444R-T4			
IC203	8-759-533-82	IC AD9808JSTRL			
IC204	8-759-445-93	IC AK6440AM-E2			
IC206	1-803-337-11	IC TGA-P912032HA-MP3CA			
IC207	8-759-526-23	IC CXD8691GF-TEB			
IC501	8-759-475-79	IC uPD16833AG3-E2			
IC502	8-759-444-87	IC NJM324V(TE2)			
IC1402	8-759-534-25	IC AN2222FBQ-EB			
IC1404	8-759-541-71	IC RN5RZ46BA-TL			
IC1501	8-759-535-44	IC M65511WG-600D			
IC1502	8-759-547-25	IC MB90097PFV-G-110-BND-ER			
IC1600	8-759-545-03	IC HG73C037BPTL			
IC1601	1-803-244-11	IC TGA-D3129HF			
IC1602	8-759-535-43	IC SN104266GGM-TEB			
IC2000	8-759-082-60	IC TC7S66FU(TE85R)			
IC2001	8-759-380-80	IC LA7473V-TLM			
IC2002	8-759-534-26	IC AN2902FHQ-EB			
IC2003	8-759-524-60	IC AK4512-VF-E2			
IC2005	8-759-536-88	IC RN5RZ28BA-TL			

Ref. No.	Part No.	Description	Remarks
IC2006	8-759-541-70	IC RN5RG28AA-TL	
IC2200	8-759-398-90	IC S-81236PG-P7-T1	
IC2201	8-759-424-79	IC S-8423YFS-T2	
IC2203	8-759-536-72	IC TL1596CPWR	
IC2204	8-759-545-06	IC S579C15AGGB-SGX4780-TEB	
IC2401	8-759-563-16	IC MB91191LGA-G-120-BND-ER	
IC2404	8-759-445-94	IC AK6480AM-E2	
IC3400	8-759-534-60	IC S-8328B55MC-EXJ-T2	
IC3401	8-759-096-87	IC TC7WU04FU(TE12R)	
IC3402	8-759-536-88	IC RN5RZ28BA-TL	
IC5000	8-759-546-65	IC CXA8115AR-T4	
IC5001	8-759-530-19	IC MB40D001PFV-G-BND-ER	
IC5002	8-752-392-33	IC CXD2458AR-T4	
		< COIL >	
L201	1-414-771-91	INDUCTOR CHIP 10uH	
L202	1-414-771-91	INDUCTOR CHIP 10uH	
L203	1-414-771-91	INDUCTOR CHIP 10uH	
L204	1-414-771-91	INDUCTOR CHIP 10uH	
L205	1-414-771-91	INDUCTOR CHIP 10uH	
L206	1-414-771-91	INDUCTOR CHIP 10uH	
L501	1-414-771-91	INDUCTOR CHIP 10uH	
L502	1-414-771-91	INDUCTOR CHIP 10uH	
L503	1-414-771-91	INDUCTOR CHIP 10uH	
L504	1-414-771-91	INDUCTOR CHIP 10uH	
L1400	1-414-771-91	INDUCTOR CHIP 10uH	
L1404	1-414-771-91	INDUCTOR CHIP 10uH	
L1500	1-414-771-91	INDUCTOR CHIP 10uH	
L1501	1-414-771-91	INDUCTOR CHIP 10uH	
L1601	1-414-245-11	INDUCTOR 1.5uH	
L1602	1-414-771-91	INDUCTOR CHIP 10uH	
L1603	1-414-771-91	INDUCTOR CHIP 10uH	
L1604	1-414-771-91	INDUCTOR CHIP 10uH	
L1605	1-414-771-91	INDUCTOR CHIP 10uH	
L2001	1-414-771-91	INDUCTOR CHIP 10uH	
L2002	1-414-771-91	INDUCTOR CHIP 10uH	
L2003	1-414-757-11	INDUCTOR 100uH	
L2004	1-414-771-91	INDUCTOR CHIP 10uH	
L2005	1-414-771-91	INDUCTOR CHIP 10uH	
L2201	1-414-771-91	INDUCTOR CHIP 10uH	
L2400	1-216-295-91	SHORT 0	
L2900	1-469-058-11	INDUCTOR CHIP 22uH	
L3400	1-414-771-91	INDUCTOR CHIP 10uH	
L3403	1-416-705-21	INDUCTOR 22uH	
L3404	1-414-771-91	INDUCTOR CHIP 10uH	
L5000	1-414-771-91	INDUCTOR CHIP 10uH	
L5001	1-469-058-11	INDUCTOR CHIP 22uH	
L5004	1-469-058-11	INDUCTOR CHIP 22uH	
L5006	1-412-947-11	INDUCTOR 4.7uH	
		< IC LINK >	
⚠PS2200	1-533-874-11	FUSE, MICRO	
		< TRANSISTOR >	
Q201	8-729-037-61	TRANSISTOR RN2104F(TPL3)	
Q202	8-729-037-61	TRANSISTOR RN2104F(TPL3)	
Q203	8-729-037-74	TRANSISTOR UN9213J-(K8).SO	
Q204	8-729-037-74	TRANSISTOR UN9213J-(K8).SO	
Q205	8-729-429-00	TRANSISTOR UN9119J-(K8).SO	
Q501	8-729-037-53	TRANSISTOR 2SA1832F-Y/GR(TPL3)	
Q502	8-729-037-52	TRANSISTOR 2SC4738F-Y/GR(TPL3)	
Q503	8-729-037-52	TRANSISTOR 2SC4738F-Y/GR(TPL3)	
Q1500	8-729-037-52	TRANSISTOR 2SC4738F-Y/GR(TPL3)	
Q1501	8-729-037-52	TRANSISTOR 2SC4738F-Y/GR(TPL3)	
Q1502	8-729-037-52	TRANSISTOR 2SC4738F-Y/GR(TPL3)	
Q1503	8-729-037-52	TRANSISTOR 2SC4738F-Y/GR(TPL3)	
Q1504	8-729-037-52	TRANSISTOR 2SC4738F-Y/GR(TPL3)	
Q2000	8-729-429-50	TRANSISTOR XP4312-TXE	
Q2001	8-729-037-61	TRANSISTOR RN2104F(TPL3)	
Q2002	8-729-427-72	TRANSISTOR XP4501-TXE	
Q2003	8-729-427-72	TRANSISTOR XP4501-TXE	
Q2006	8-729-023-85	TRANSISTOR 2SJ168(TE85L)	
Q2007	8-729-429-50	TRANSISTOR XP4312-TXE	
Q2008	8-729-023-85	TRANSISTOR 2SJ168(TE85L)	
Q2009	8-729-037-52	TRANSISTOR 2SC4738F-Y/GR(TPL3)	
Q2010	8-729-427-72	TRANSISTOR XP4501-TXE	
Q2011	8-729-012-64	TRANSISTOR 2SB1396-S/T/U-TD	
Q2012	8-729-037-74	TRANSISTOR UN9213J-(K8).SO	
Q2013	8-729-037-53	TRANSISTOR 2SB1462J-QR(TX).SO	
Q2014	8-729-429-50	TRANSISTOR XP4312-TXE	
Q2015	8-729-023-85	TRANSISTOR 2SJ168(TE85L)	
Q2016	8-729-023-85	TRANSISTOR 2SJ168(TE85L)	
Q2201	8-729-037-74	TRANSISTOR UN9213J-(K8).SO	
Q2202	8-729-037-52	TRANSISTOR 2SC4738F-Y/GR(TPL3)	
Q2206	8-729-041-43	TRANSISTOR HN1L02FU(TE85R)	
Q2211	8-729-042-58	TRANSISTOR UN9111J-(K8).SO	
Q2213	8-729-427-70	TRANSISTOR XP4401-TXE	
Q2214	8-729-037-61	TRANSISTOR RN2104F(TPL3)	
Q2216	8-729-141-48	TRANSISTOR 2SB624-T1BV4	
Q2219	8-729-037-72	TRANSISTOR UN9211J-(K8).SO	
Q2220	8-729-037-72	TRANSISTOR UN9211J-(K8).SO	
Q2901	8-729-037-72	TRANSISTOR UN9211J-(K8).SO	
Q3400	8-729-037-52	TRANSISTOR 2SC4738F-Y/GR(TPL3)	
Q3401	8-729-037-52	TRANSISTOR 2SC4738F-Y/GR(TPL3)	
Q3402	8-729-037-53	TRANSISTOR 2SA1832F-Y/GR(TPL3)	
Q3403	8-729-037-52	TRANSISTOR 2SC4738F-Y/GR(TPL3)	
Q3404	8-729-037-53	TRANSISTOR 2SA1832F-Y/GR(TPL3)	
Q3405	8-729-037-52	TRANSISTOR 2SC4738F-Y/GR(TPL3)	
Q3406	8-729-037-52	TRANSISTOR 2SC4738F-Y/GR(TPL3)	
Q3407	8-729-037-74	TRANSISTOR UN9213J-(K8).SO	
Q3408	8-729-037-53	TRANSISTOR 2SA1832F-Y/GR(TPL3)	
Q3409	8-729-041-23	TRANSISTOR NDS356AP	
Q3410	8-729-037-52	TRANSISTOR 2SC4738F-Y/GR(TPL3)	
Q3411	8-729-037-53	TRANSISTOR 2SA1832F-Y/GR(TPL3)	
Q3414	8-729-041-24	TRANSISTOR NDS355AN	
Q3415	8-729-037-53	TRANSISTOR 2SA1832F-Y/GR(TPL3)	
Q3416	8-729-037-53	TRANSISTOR 2SA1832F-Y/GR(TPL3)	
		< RESISTOR >	
R202	1-218-990-11	SHORT 0	
R203	1-218-990-11	SHORT 0	
R206	1-218-977-11	RES,CHIP 100K 5% 1/16W	
R209	1-218-973-11	RES,CHIP 47K 5% 1/16W	
R210	1-218-953-11	RES,CHIP 1K 5% 1/16W	

Note :	**Note :**
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	Description			Remarks
R213	1-218-953-11	RES,CHIP	1K	5%	1/16W
R214	1-218-973-11	RES,CHIP	47K	5%	1/16W
R217	1-218-945-11	RES,CHIP	220	5%	1/16W
R218	1-218-941-11	RES,CHIP	100	5%	1/16W
R221	1-218-985-11	RES,CHIP	470K	5%	1/16W
R226	1-218-990-11	SHORT	0		
R230	1-218-977-11	RES,CHIP	100K	5%	1/16W
R234	1-218-977-11	RES,CHIP	100K	5%	1/16W
R236	1-218-977-11	RES,CHIP	100K	5%	1/16W
R237	1-218-977-11	RES,CHIP	100K	5%	1/16W
R238	1-218-977-11	RES,CHIP	100K	5%	1/16W
R245	1-218-953-11	RES,CHIP	1K	5%	1/16W
R246	1-218-973-11	RES,CHIP	47K	5%	1/16W
R247	1-218-973-11	RES,CHIP	47K	5%	1/16W
R250	1-218-977-11	RES,CHIP	100K	5%	1/16W
R251	1-218-989-11	RES,CHIP	1M	5%	1/16W
R252	1-218-989-11	RES,CHIP	1M	5%	1/16W
R255	1-218-953-11	RES,CHIP	1K	5%	1/16W
R256	1-218-957-11	RES,CHIP	2.2K	5%	1/16W
R258	1-218-933-11	RES,CHIP	22	5%	1/16W
R260	1-218-977-11	RES,CHIP	100K	5%	1/16W
R264	1-218-961-11	RES,CHIP	4.7K	5%	1/16W
R266	1-218-961-11	RES,CHIP	4.7K	5%	1/16W
R284	1-218-965-11	RES,CHIP	10K	5%	1/16W
R285	1-218-990-11	SHORT	0		
R286	1-218-989-11	RES,CHIP	1M	5%	1/16W
R290	1-218-985-11	RES,CHIP	470K	0.50%	1/16W
R291	1-208-947-11	RES,CHIP	330K	0.50%	1/16W
R293	1-218-990-11	SHORT	0		
R502	1-218-975-11	RES,CHIP	68K	5%	1/16W
R503	1-218-961-11	RES,CHIP	4.7K	5%	1/16W
R504	1-218-975-11	RES,CHIP	68K	5%	1/16W
R507	1-216-295-91	SHORT	0		
R509	1-218-953-11	RES,CHIP	1K	5%	1/16W
R510	1-218-989-11	RES,CHIP	1M	5%	1/16W
R511	1-218-957-11	RES,CHIP	2.2K	5%	1/16W
R512	1-218-965-11	RES,CHIP	10K	5%	1/16W
R513	1-218-981-11	RES,CHIP	220K	5%	1/16W
R514	1-218-985-11	RES,CHIP	470K	5%	1/16W
R515	1-218-985-11	RES,CHIP	470K	5%	1/16W
R516	1-218-957-11	RES,CHIP	2.2K	5%	1/16W
R517	1-218-963-11	RES,CHIP	6.8K	5%	1/16W
R518	1-218-969-11	RES,CHIP	22K	5%	1/16W
R519	1-218-985-11	RES,CHIP	470K	5%	1/16W
R520	1-218-953-11	RES,CHIP	1K	5%	1/16W
R521	1-218-953-11	RES,CHIP	1K	5%	1/16W
R522	1-218-947-11	RES,CHIP	330	5%	1/16W
R523	1-218-969-11	RES,CHIP	22K	5%	1/16W
R524	1-218-953-11	RES,CHIP	1K	5%	1/16W
R525	1-218-965-11	RES,CHIP	10K	5%	1/16W
R526	1-218-973-11	RES,CHIP	47K	5%	1/16W
R1418	1-218-969-11	RES,CHIP	22K	5%	1/16W
R1419	1-218-953-11	RES,CHIP	1K	5%	1/16W
R1421	1-218-953-11	RES,CHIP	1K	5%	1/16W
R1425	1-218-939-11	RES,CHIP	68	5%	1/16W
R1430	1-218-953-11	RES,CHIP	1K	5%	1/16W
R1432	1-218-965-11	RES,CHIP	10K	5%	1/16W
R1433	1-218-953-11	RES,CHIP	1K	5%	1/16W
R1438	1-218-939-11	RES,CHIP	68	5%	1/16W
R1439	1-218-939-11	RES,CHIP	68	5%	1/16W

Ref. No.	Part No.	Description			Remarks
R1498	1-218-989-11	RES,CHIP	1M	5%	1/16W
R1507	1-218-949-11	RES,CHIP	470	5%	1/16W
R1508	1-218-959-11	RES,CHIP	3.3K	5%	1/16W
R1509	1-218-961-11	RES,CHIP	4.7K	5%	1/16W
R1510	1-218-949-11	RES,CHIP	470	5%	1/16W
R1511	1-218-959-11	RES,CHIP	3.3K	5%	1/16W
R1512	1-218-961-11	RES,CHIP	4.7K	5%	1/16W
R1513	1-218-955-11	RES,CHIP	1.5K	5%	1/16W
R1514	1-218-949-11	RES,CHIP	470	5%	1/16W
R1515	1-218-961-11	RES,CHIP	4.7K	5%	1/16W
R1516	1-218-951-11	RES,CHIP	680	5%	1/16W
R1517	1-218-957-11	RES,CHIP	2.2K	5%	1/16W
R1518	1-218-957-11	RES,CHIP	2.2K	5%	1/16W
R1521	1-218-947-11	RES,CHIP	330	5%	1/16W
R1522	1-218-990-11	SHORT	0		
R1523	1-218-990-11	SHORT	0		
R1524	1-218-990-11	SHORT	0		
R1525	1-218-990-11	SHORT	0		
R1526	1-218-990-11	SHORT	0		
R1527	1-218-990-11	SHORT	0		
R1528	1-218-990-11	SHORT	0		
R1529	1-218-990-11	SHORT	0		
R1531	1-218-990-11	SHORT	0		
R1618	1-218-961-11	RES,CHIP	4.7K	5%	1/16W
R1619	1-218-947-11	RES,CHIP	330	5%	1/16W
R1621	1-218-965-11	RES,CHIP	10K	5%	1/16W
R1622	1-218-965-11	RES,CHIP	10K	5%	1/16W
R1623	1-218-947-11	RES,CHIP	330	5%	1/16W
R1624	1-218-990-11	SHORT	0		
R1625	1-218-990-11	SHORT	0		
R1626	1-218-990-11	SHORT	0		
R1627	1-218-990-11	SHORT	0		
R1633	1-218-990-11	SHORT	0		
R1635	1-218-849-11	RES,CHIP	1.2K	0.50%	1/16W
R1636	1-218-990-11	SHORT	0		
R1637	1-208-709-11	RES,CHIP	12K	0.50%	1/16W
R1638	1-208-709-11	RES,CHIP	12K	0.50%	1/16W
R1640	1-218-990-11	SHORT	0		
R1643	1-218-990-11	SHORT	0		
R1645	1-218-990-11	SHORT	0		
R1646	1-218-990-11	SHORT	0		
R1648	1-218-990-11	SHORT	0		
R1689	1-218-937-11	RES,CHIP	47	5%	1/16W
R1694	1-218-938-11	RES,CHIP	56	0.50%	1/16W
R1695	1-218-938-11	RES,CHIP	56	0.50%	1/16W
R1696	1-208-707-11	RES,CHIP	10K	0.50%	1/16W
R1697	1-208-707-11	RES,CHIP	10K	0.50%	1/16W
R1698	1-218-938-11	RES,CHIP	56	0.50%	1/16W
R1699	1-218-938-11	RES,CHIP	56	0.50%	1/16W
R2000	1-218-973-11	RES,CHIP	47K	5%	1/16W
R2001	1-218-963-11	RES,CHIP	6.8K	5%	1/16W
R2002	1-218-963-11	RES,CHIP	6.8K	5%	1/16W
R2004	1-218-990-11	SHORT	0		
R2005	1-218-936-11	RES,CHIP	39	5%	1/16W
R2006	1-218-935-11	RES,CHIP	33	5%	1/16W
R2007	1-218-953-11	RES,CHIP	1K	5%	1/16W
R2008	1-218-965-11	RES,CHIP	10K	5%	1/16W
R2009	1-218-965-11	RES,CHIP	10K	5%	1/16W
R2010	1-218-953-11	RES,CHIP	1K	5%	1/16W
R2011	1-218-952-11	RES,CHIP	820	5%	1/16W

Ref. No.	Part No.	Description			Remarks
R2012	1-218-957-11	RES,CHIP	2.2K	5%	1/16W
R2013	1-218-957-11	RES,CHIP	2.2K	5%	1/16W
R2014	1-218-952-11	RES,CHIP	820	5%	1/16W
R2015	1-218-990-11	SHORT	0		
R2018	1-218-973-11	RES,CHIP	47K	5%	1/16W
R2019	1-218-973-11	RES,CHIP	47K	5%	1/16W
R2022	1-218-977-11	RES,CHIP	100K	5%	1/16W
R2023	1-218-990-11	SHORT	0		
R2025	1-218-990-11	SHORT	0		
R2026	1-218-990-11	SHORT	0		
R2027	1-218-949-11	RES,CHIP	470	5%	1/16W
R2028	1-218-949-11	RES,CHIP	470	5%	1/16W
R2030	1-218-981-11	RES,CHIP	220K	5%	1/16W
R2031	1-218-957-11	RES,CHIP	2.2K	5%	1/16W
R2032	1-218-971-11	RES,CHIP	33K	5%	1/16W
R2033	1-218-973-11	RES,CHIP	47K	5%	1/16W
R2034	1-218-990-11	SHORT	0		
R2040	1-218-957-11	RES,CHIP	2.2K	5%	1/16W
R2041	1-218-957-11	RES,CHIP	2.2K	5%	1/16W
R2042	1-218-953-11	RES,CHIP	1K	5%	1/16W
R2043	1-218-953-11	RES,CHIP	1K	5%	1/16W
R2044	1-218-953-11	RES,CHIP	1K	5%	1/16W
R2045	1-218-953-11	RES,CHIP	1K	5%	1/16W
R2046	1-218-953-11	RES,CHIP	1K	5%	1/16W
R2047	1-218-953-11	RES,CHIP	1K	5%	1/16W
R2048	1-218-936-11	RES,CHIP	39	5%	1/16W
R2049	1-218-935-11	RES,CHIP	33	5%	1/16W
R2050	1-218-969-11	RES,CHIP	22K	5%	1/16W
R2051	1-218-953-11	RES,CHIP	1K	5%	1/16W
R2052	1-218-969-11	RES,CHIP	22K	5%	1/16W
R2053	1-218-953-11	RES,CHIP	1K	5%	1/16W
R2054	1-218-941-11	RES,CHIP	100	5%	1/16W
R2055	1-216-833-11	METAL CHIP	10K	5%	1/16W
R2056	1-218-985-11	RES,CHIP	470K	5%	1/16W
R2057	1-218-965-11	RES,CHIP	10K	5%	1/16W
R2203	1-218-953-11	RES,CHIP	1K	5%	1/16W
R2204	1-218-953-11	RES,CHIP	1K	5%	1/16W
R2205	1-218-977-11	RES,CHIP	100K	5%	1/16W
R2206	1-218-945-11	RES,CHIP	220	5%	1/16W
R2209	1-218-973-11	RES,CHIP	47K	5%	1/16W
R2210	1-218-977-11	RES,CHIP	100K	5%	1/16W
R2212	1-218-986-11	RES,CHIP	560K	5%	1/16W
R2213	1-218-954-11	RES,CHIP	1.2K	5%	1/16W
R2214	1-218-990-11	SHORT	0		
R2215	1-218-985-11	RES,CHIP	470K	5%	1/16W
R2216	1-218-955-11	RES,CHIP	1.5K	5%	1/16W
R2217	1-218-959-11	RES,CHIP	3.3K	5%	1/16W
R2218	1-218-963-11	RES,CHIP	6.8K	5%	1/16W
R2219	1-218-969-11	RES,CHIP	22K	5%	1/16W
R2221	1-218-985-11	RES,CHIP	470K	5%	1/16W
R2222	1-218-985-11	RES,CHIP	470K	5%	1/16W
R2223	1-218-985-11	RES,CHIP	470K	5%	1/16W
R2224	1-218-985-11	RES,CHIP	470K	5%	1/16W
R2225	1-218-985-11	RES,CHIP	470K	5%	1/16W
R2226	1-218-985-11	RES,CHIP	470K	5%	1/16W
R2227	1-218-977-11	RES,CHIP	100K	5%	1/16W
R2228	1-218-990-11	SHORT	0		
R2229	1-218-985-11	RES,CHIP	470K	5%	1/16W
R2230	1-218-985-11	RES,CHIP	470K	5%	1/16W
R2231	1-218-973-11	RES,CHIP	47K	5%	1/16W

Ref. No.	Part No.	Description			Remarks
R2232	1-218-965-11	RES,CHIP	10K	5%	1/16W
R2233	1-218-958-11	RES,CHIP	2.7K	5%	1/16W
R2234	1-218-938-11	RES,CHIP	56	0.50%	1/16W
R2235	1-218-989-11	RES,CHIP	1M	5%	1/16W
R2236	1-218-990-11	SHORT	0		
R2237	1-218-989-11	RES,CHIP	1M	0.50%	1/16W
R2239	1-218-989-11	RES,CHIP	1M	0.50%	1/16W
R2240	1-218-977-11	RES,CHIP	100K	5%	1/16W
R2241	1-218-977-11	RES,CHIP	100K	5%	1/16W
R2242	1-218-977-11	RES,CHIP	100K	5%	1/16W
R2245	1-218-953-11	RES,CHIP	1K	5%	1/16W
R2246	1-218-965-11	RES,CHIP	10K	5%	1/16W
R2247	1-218-977-11	RES,CHIP	100K	5%	1/16W
R2248	1-218-965-11	RES,CHIP	10K	5%	1/16W
R2249	1-218-965-11	RES,CHIP	10K	5%	1/16W
R2250	1-218-965-11	RES,CHIP	10K	5%	1/16W
R2251	1-218-965-11	RES,CHIP	10K	5%	1/16W
R2252	1-202-974-11	RES,CHIP	3.3M	5%	1/16W
R2253	1-218-989-11	RES,CHIP	1M	5%	1/16W
R2254	1-202-974-11	RES,CHIP	3.3M	5%	1/16W
R2255	1-202-974-11	RES,CHIP	3.3M	5%	1/16W
R2256	1-218-953-11	RES,CHIP	1K	5%	1/16W
R2257	1-218-973-11	RES,CHIP	47K	5%	1/16W
R2258	1-218-985-11	RES,CHIP	470K	5%	1/16W
R2259	1-218-985-11	RES,CHIP	470K	5%	1/16W
R2260	1-218-985-11	RES,CHIP	470K	5%	1/16W
R2261	1-218-989-11	RES,CHIP	1M	5%	1/16W
R2262	1-219-570-11	RES,CHIP	10M	5%	1/16W
R2263	1-218-962-11	RES,CHIP	5.6K	5%	1/16W
R2264	1-218-957-11	RES,CHIP	2.2K	5%	1/16W
R2265	1-218-977-11	RES,CHIP	100K	5%	1/16W
R2266	1-218-985-11	RES,CHIP	470K	5%	1/16W
R2267	1-218-985-11	RES,CHIP	470K	5%	1/16W
R2268	1-218-949-11	RES,CHIP	470	5%	1/16W
R2269	1-218-955-11	RES,CHIP	1.5K	5%	1/16W
R2270	1-218-985-11	RES,CHIP	470K	5%	1/16W
R2271	1-216-791-11	METAL CHIP	3.3	5%	1/16W
R2272	1-218-961-11	RES,CHIP	4.7K	5%	1/16W
R2273	1-218-959-11	RES,CHIP	3.3K	5%	1/16W
R2274	1-218-959-11	RES,CHIP	3.3K	5%	1/16W
R2275	1-218-959-11	RES,CHIP	3.3K	5%	1/16W
R2277	1-218-941-11	RES,CHIP	100	5%	1/16W
R2278	1-218-941-11	RES,CHIP	100	5%	1/16W
R2279	1-218-953-11	RES,CHIP	1K	5%	1/16W
R2280	1-218-953-11	RES,CHIP	1K	5%	1/16W
R2281	1-218-953-11	RES,CHIP	1K	5%	1/16W
R2282	1-218-953-11	RES,CHIP	1K	5%	1/16W
R2283	1-218-953-11	RES,CHIP	1K	5%	1/16W
R2284	1-218-953-11	RES,CHIP	1K	5%	1/16W
R2285	1-218-953-11	RES,CHIP	1K	5%	1/16W
R2286	1-218-953-11	RES,CHIP	1K	5%	1/16W
R2287	1-218-953-11	RES,CHIP	1K	5%	1/16W
R2288	1-218-953-11	RES,CHIP	1K	5%	1/16W
R2289	1-218-953-11	RES,CHIP	1K	5%	1/16W
R2290	1-218-953-11	RES,CHIP	1K	5%	1/16W
R2291	1-218-953-11	RES,CHIP	1K	5%	1/16W
R2292	1-218-953-11	RES,CHIP	1K	5%	1/16W
R2293	1-218-953-11	RES,CHIP	1K	5%	1/16W
R2295	1-218-953-11	RES,CHIP	1K	5%	1/16W
R2296	1-218-953-11	RES,CHIP	1K	5%	1/16W

Ref. No.	Part No.	Description			Remarks
R2297	1-218-953-11	RES,CHIP	1K	5%	1/16W
R2298	1-218-953-11	RES,CHIP	1K	5%	1/16W
R2299	1-218-953-11	RES,CHIP	1K	5%	1/16W
R2300	1-218-953-11	RES,CHIP	1K	5%	1/16W
R2301	1-218-990-11	SHORT	0		
R2401	1-218-985-11	RES,CHIP	470K	5%	1/16W
R2403	1-414-445-11	FERRITE	0UH		
R2404	1-218-990-11	SHORT	0		
R2405	1-218-977-11	RES,CHIP	100K	5%	1/16W
R2406	1-218-977-11	RES,CHIP	100K	5%	1/16W
R2407	1-218-977-11	RES,CHIP	100K	5%	1/16W
R2408	1-218-977-11	RES,CHIP	100K	5%	1/16W
R2409	1-218-990-11	SHORT	0		
R2410	1-218-953-11	RES,CHIP	1K	5%	1/16W
R2411	1-218-990-11	SHORT	0		
R2412	1-218-990-11	SHORT	0		
R2415	1-218-953-11	RES,CHIP	1K	5%	1/16W
R2416	1-218-985-11	RES,CHIP	470K	5%	1/16W
R2417	1-218-953-11	RES,CHIP	1K	5%	1/16W
R2418	1-218-985-11	RES,CHIP	470K	5%	1/16W
R2419	1-218-953-11	RES,CHIP	1K	5%	1/16W
R2420	1-218-985-11	RES,CHIP	470K	5%	1/16W
R2421	1-218-953-11	RES,CHIP	1K	5%	1/16W
R2422	1-218-985-11	RES,CHIP	470K	5%	1/16W
R2423	1-218-953-11	RES,CHIP	1K	5%	1/16W
R2424	1-218-985-11	RES,CHIP	470K	5%	1/16W
R2428	1-218-985-11	RES,CHIP	470K	5%	1/16W
R2429	1-208-943-11	RES,CHIP	220K	0.50%	1/16W
R2430	1-208-927-11	RES,CHIP	47K	0.50%	1/16W
R2432	1-218-977-11	RES,CHIP	100K	5%	1/16W
R2433	1-218-977-11	RES,CHIP	100K	5%	1/16W
R2434	1-218-977-11	RES,CHIP	100K	5%	1/16W
R2436	1-218-977-11	RES,CHIP	100K	5%	1/16W
R2439	1-218-977-11	RES,CHIP	100K	5%	1/16W
R2440	1-218-977-11	RES,CHIP	100K	5%	1/16W
R2441	1-218-985-11	RES,CHIP	470K	5%	1/16W
R2442	1-218-985-11	RES,CHIP	470K	5%	1/16W
R2443	1-218-985-11	RES,CHIP	470K	5%	1/16W
R2905	1-218-961-11	RES,CHIP	4.7K	5%	1/16W
R2908	1-218-953-11	RES,CHIP	1K	5%	1/16W
R2911	1-218-954-11	RES,CHIP	1.2K	5%	1/16W
R2912	1-218-955-11	RES,CHIP	1.5K	5%	1/16W
R2913	1-218-954-11	RES,CHIP	1.2K	5%	1/16W
R2914	1-218-955-11	RES,CHIP	1.5K	5%	1/16W
R2915	1-218-959-11	RES,CHIP	3.3K	5%	1/16W
R2916	1-218-959-11	RES,CHIP	3.3K	5%	1/16W
R3401	1-218-973-11	RES,CHIP	47K	5%	1/16W
R3402	1-218-969-11	RES,CHIP	22K	5%	1/16W
R3403	1-218-977-11	RES,CHIP	100K	5%	1/16W
R3404	1-218-977-11	RES,CHIP	100K	5%	1/16W
R3405	1-218-969-11	RES,CHIP	22K	5%	1/16W
R3406	1-218-965-11	RES,CHIP	10K	5%	1/16W
R3408	1-208-939-11	RES,CHIP	150K	0.50%	1/16W
R3409	1-208-927-11	RES,CHIP	47K	0.50%	1/16W
R3410	1-208-947-11	RES,CHIP	330K	0.50%	1/16W
R3411	1-218-990-11	SHORT	0		
R3412	1-208-935-11	RES,CHIP	100K	0.50%	1/16W
R3413	1-218-989-11	RES,CHIP	1M	5%	1/16W
R3414	1-218-977-11	RES,CHIP	100K	5%	1/16W
R3415	1-218-977-11	RES,CHIP	100K	5%	1/16W

Ref. No.	Part No.	Description			Remarks
R3416	1-218-969-11	RES,CHIP	22K	5%	1/16W
R3417	1-208-943-11	RES,CHIP	220K	0.50%	1/16W
R3418	1-218-978-11	RES,CHIP	120K	0.50%	1/16W
R3419	1-208-909-11	RES,CHIP	8.2K	0.50%	1/16W
R3420	1-218-977-11	RES,CHIP	100K	5%	1/16W
R3421	1-218-981-11	RES,CHIP	220K	5%	1/16W
R3422	1-218-981-11	RES,CHIP	220K	5%	1/16W
R3423	1-218-990-11	SHORT	0		
R3426	1-218-990-11	SHORT	0		
R3428	1-218-990-11	SHORT	0		
R3429	1-218-974-11	RES,CHIP	56K	5%	1/16W
R3430	1-218-969-11	RES,CHIP	22K	5%	1/16W
R3432	1-218-990-11	SHORT	0		
R3433	1-218-990-11	SHORT	0		
R5001	1-218-971-11	RES,CHIP	33K	5%	1/16W
R5002	1-218-969-11	RES,CHIP	22K	5%	1/16W
R5004	1-218-990-11	SHORT	0		
R5007	1-218-985-11	RES,CHIP	470K	5%	1/16W
R5010	1-218-990-11	SHORT	0		
R5011	1-218-990-11	SHORT	0		
R5014	1-218-973-11	RES,CHIP	47K	5%	1/16W
R5015	1-218-972-11	RES,CHIP	39K	5%	1/16W
R5016	1-218-941-11	RES,CHIP	100	5%	1/16W
R5017	1-218-941-11	RES,CHIP	100	5%	1/16W
R5018	1-216-857-11	METAL CHIP	1M	5%	1/16W
R5019	1-218-941-11	RES,CHIP	100	5%	1/16W
R5023	1-218-967-11	RES,CHIP	15K	5%	1/16W
R5024	1-218-972-11	RES,CHIP	39K	5%	1/16W
R5025	1-218-989-11	RES,CHIP	1M	5%	1/16W
R5026	1-218-977-11	RES,CHIP	100K	5%	1/16W
R5027	1-218-965-11	RES,CHIP	10K	5%	1/16W
R5028	1-218-971-11	RES,CHIP	33K	5%	1/16W
R5029	1-218-990-11	SHORT	0		
R5030	1-218-953-11	RES,CHIP	1K	5%	1/16W
R5037	1-218-990-11	SHORT	0		
		< SWITCH >			
S2201	1-762-498-21	SWITCH, PUSH (1 KEY) (PANEL CLOSE)			
		< VIBRATOR >			
X201	1-767-203-21	VIBRATOR, CRYSTAL (36MHz)			
X202	1-767-980-21	VIBRATOR, CERAMIC (20MHz)			
X1600	1-781-045-21	VIBRATOR, CRYSTAL (24.576MHz)			
X2200	1-767-980-21	VIBRATOR, CERAMIC (20MHz)			
X2201	1-767-771-41	VIBRATOR, CRYSTAL (32.767KHz)			
X2400	1-781-044-21	VIBRATOR, CRYSTAL (20MHz)			

A-7073-673-A VF-125 BOARD, COMPLETE
****

(Ref. No.:10,000 Series)

Ref. No.	Part No.	Description			Remarks
		< CAPACITOR >			
C5500	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C5501	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
		< CONNECTOR >			
CN5500	1-778-590-21	CONNECTOR, BOARD TO BOARD 20P			
CN5501	1-750-333-11	CONNECTOR, FFC/FPC (ZIF) 6P			
CN5502	1-691-380-21	CONNECTOR, FFC/FPC 16P			

Ref. No.	Part No.	Description	Remarks
		< TRANSISTOR >	
Q5500	8-729-037-52	TRANSISTOR 2SC4738F-Y/GR(TPL3)	
Q5501	8-729-037-52	TRANSISTOR 2SC4738F-Y/GR(TPL3)	
Q5502	8-729-037-52	TRANSISTOR 2SC4738F-Y/GR(TPL3)	
Q5503	8-729-037-52	TRANSISTOR 2SC4738F-Y/GR(TPL3)	
Q5504	8-729-037-52	TRANSISTOR 2SC4738F-Y/GR(TPL3)	
Q5505	8-729-037-52	TRANSISTOR 2SC4738F-Y/GR(TPL3)	
		< RESISTOR >	
R5500	1-218-964-11	RES,CHIP 8.2K 5%	1/16W
R5501	1-218-964-11	RES,CHIP 8.2K 5%	1/16W
R5502	1-218-971-11	RES,CHIP 33K 5%	1/16W
R5503	1-218-964-11	RES,CHIP 8.2K 5%	1/16W
R5504	1-218-955-11	RES,CHIP 1.5K 5%	1/16W
R5505	1-218-962-11	RES,CHIP 5.6K 5%	1/16W
R5506	1-218-957-11	RES,CHIP 2.2K 5%	1/16W
R5507	1-218-938-11	RES,CHIP 56 5%	1/16W
R5508	1-218-938-11	RES,CHIP 56 5%	1/16W
R5509	1-218-938-11	RES,CHIP 56 5%	1/16W
R5510	1-218-938-11	RES,CHIP 56 5%	1/16W
R5511	1-218-990-11	SHORT 0	
		< SWITCH >	
S5500	1-771-040-21	SWITCH, PUSH (EVF ON/OFF)	
		< THERMISTOR >	
TH5500	1-810-812-21	THERMISTOR, NTC (1608)	
		MISCELLANEOUS *************	
* 3	1-528-909-11	BATTERY, LITHIUM SECONDARY	
4	1-959-018-11	HARNESS (LI-58)	
9	1-475-975-11	MICROPHONE UNIT	
52	1-694-459-11	TERMINAL BOARD, BATTERY	
103	1-959-019-11	HARNESS (PD-107)	
104	1-505-862-11	SPEAKER (2.0CM)	
105	1-959-017-11	HARNESS (SP-158)	
⚠121	1-475-711-11	TRANSFORMER UNIT, INVERTER	
123	1-475-920-21	SWITCH BLOCK, CONTROL (ME-4781)	
161	1-475-919-11	SWITCH BLOCK, CONTROL (FK-4780)	
201	8-848-728-01	DEVICE (LSV-620A (SOC)), LENS	
206	A-7030-881-A	CCD BLOCK ASSY (PC1)	
206	A-7030-885-A	CCD BLOCK ASSY (PC1E)	
208	1-758-202-21	FILTER BLOCK, OPTICAL	
D901	8-719-050-98	DIODE LN57.SO	
LCD901	8-753-050-08	DCX501BK-1	
LCD902	8-753-023-51	LCX027AK-1	
M901	A-7048-887-A	DRUM ASSY (DEH-11B-R)	
M902	8-835-524-04	MOTOR, DC SCD-0101A (CAPSTAN)	
M903	A-7010-673-A	ASSY, LM MOTOR (LOADING)	
⚠ND901	1-517-800-11	TUBE, FLUORESCENT,COLD CATHODE	
⚠ND902	1-475-980-11	BLOCK, LIGHT GUIDE PLATE	

Be sure to read “Note on the CCD Imager replacement” on page 4-10 when changing the CCD Imager.

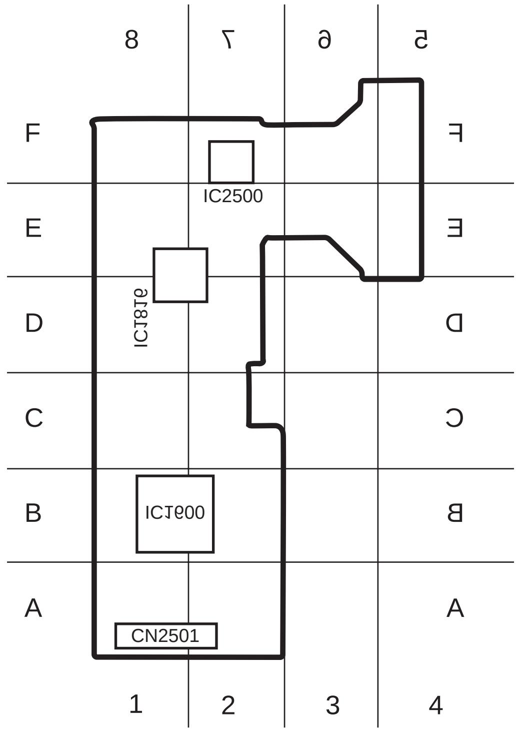
Ref. No.	Part No.	Description	Remarks
		ACCESSORIES ************	
	1-475-141-21	COMMANDER, REMOTE (RMT-808)	(PC1/PC1E:EXCEPT AEP,UK)
	1-475-141-31	COMMANDER, REMOTE (RMT-809)	(PC1E:AEP,UK)
⚠	1-475-851-21	ADAPTOR, AC (PC1:US,CND)	
⚠	1-475-851-31	ADAPTOR, AC (PC1:E,HK,JE/PC1E)	
⚠	1-555-074-21	CORD, POWER (PC1E:AUS)	
	1-559-437-11	ADAPTOR, CONVERSION 2P (JE)	
	1-569-008-21	ADAPTOR, CONVERSION 2P (E,HK,JE)	
	1-573-291-11	CONNECTOR, CONVERSION 21P(PC1E:AEP,UK)	
	1-573-856-11	ADAPTOR, CONVERSION 2P (JE)	
⚠	1-690-827-11	CORD SET, POWER (PC1E:AEP)	
	1-765-080-11	AV CONNECTION CABLE (1.5m)	(PC1/PC1E:EXCEPT AEP,UK)
⚠	1-769-608-11	CORD, POWER (E,HK)	
	1-770-019-11	ADAPTOR, CONVERSION PLUG 3P (PC1E:HK)	
⚠	1-775-549-21	CORD, POWER (PC1:US,CND)	
⚠	1-775-843-21	CORD, POWER(WITH FILTER) (PC1E:UK)	
	1-777-433-21	AV CONNECTION CABLE (1.5m)(PC1E:AEP,UK)	
⚠	1-782-476-11	CORD, POWER (PC1E:CN)	
	1-783-739-11	CORD, CONNECTION	
	3-864-274-11	MANUAL, INSTRUCTION (ENGLISH) (PC1)	
	3-864-274-21	MANUAL, INSTRUCTION (FRENCH) (PC1:CND)	
	3-864-274-31	MANUAL, INSTRUCTION	(SPANISH/PORTUGUSEE) (PC1:E,HK,JE)
	3-864-274-41	MANUAL, INSTRUCTION (CHINESE) (PC1:E/HK)	
	3-864-274-51	MANUAL, INSTRUCTION (KOREAN) (PC1:JE)	
	3-864-274-61	MANUAL. INSTRUCTION (KOREAN) (PC1:E)	
	3-864-275-11	MANUAL, INSTRUCTION (ENGLISH/RUSSIAN)	(PC1E:AEP,UK)
	3-864-275-21	MANUAL, INSTRUCTION	(SPANISH/PORTUGUSEE) (PC1:AEP)
	3-864-275-31	MANUAL, INSTRUCTION (DUTCH/FRENCH)	(PC1E:AEP)
	3-864-275-41	MANUAL, INSTRUCTION (GERMAN/ITALIAN)	(PC1E:AEP)
	3-864-275-51	MANUAL, INSTRUCTION (ENGLISH/RUSSIAN)	(PC1E:CN,E,HK,AUS,JE)
	3-864-275-61	MANUAL, INSTRUCTION (FRENCH/GERMAN)	(PC1E:CN,E,JE)
	3-864-275-71	MANUAL, INSTRUCTION (ARAQBIC/PERSIAN)	(PC1E:CN,E,JE)
	3-864-275-81	MANUAL, INSTRUCTION (CHINESE)	(PC1E:CN,E,JE)
	3-864-275-91	MANUAL, INSTRUCTION (CHINESE) (PC1E:CN)	

Note : The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	**Note :** Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

〈PARTS REFERENCE SHEET〉

You can find the parts position of location of mount locations applying to MR-40 board of a set.

MR-40 DCR-PC1/PC1E SIDE A

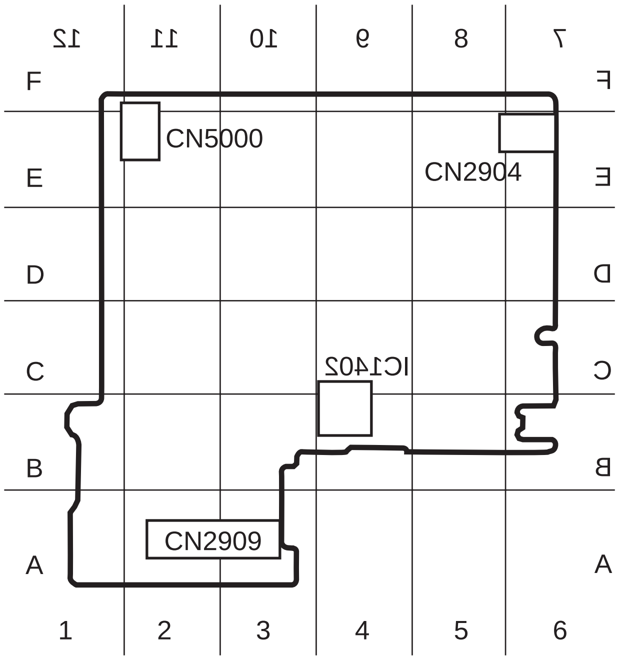

8
7
6
5
F
E
D
C
B
A
IC2500
IC1816
IC1900
CN2501
1
2
3
4

SIDE B DCR-PC1/PC1E **MR-40**

〈PARTS REFERENCE SHEET〉

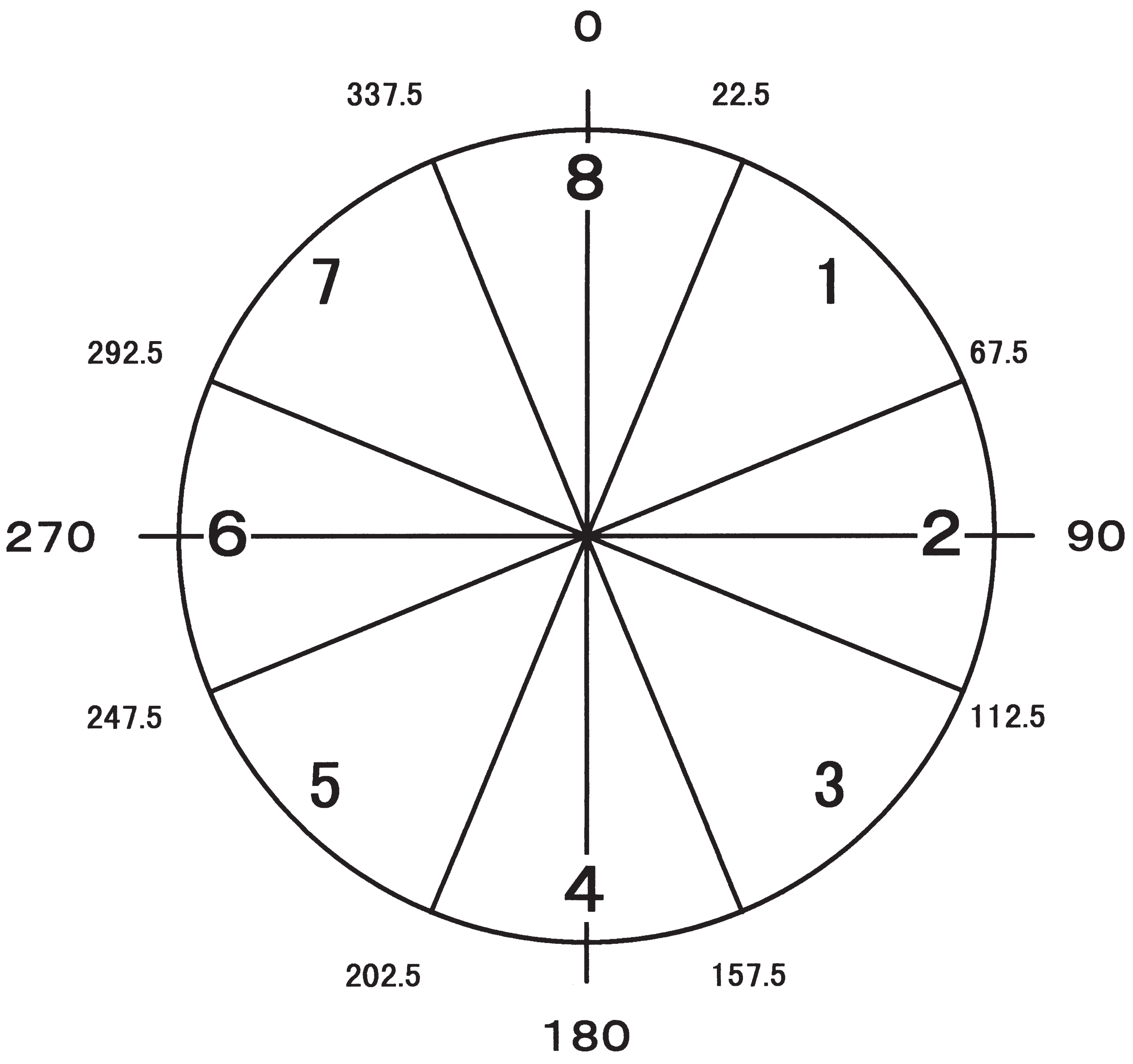
You can find the parts position of location of mount locations applying to VC-210 board of a set.

VC-210 DCR-PC1/PC1E SIDE A


12
11
10
9
8
7
F
E
D
C
B
A
CN5000
CN2904
IC1402
CN2909
1
2
3
4
5
6

SIDE B DCR-PC1/PC1E **VC-210**

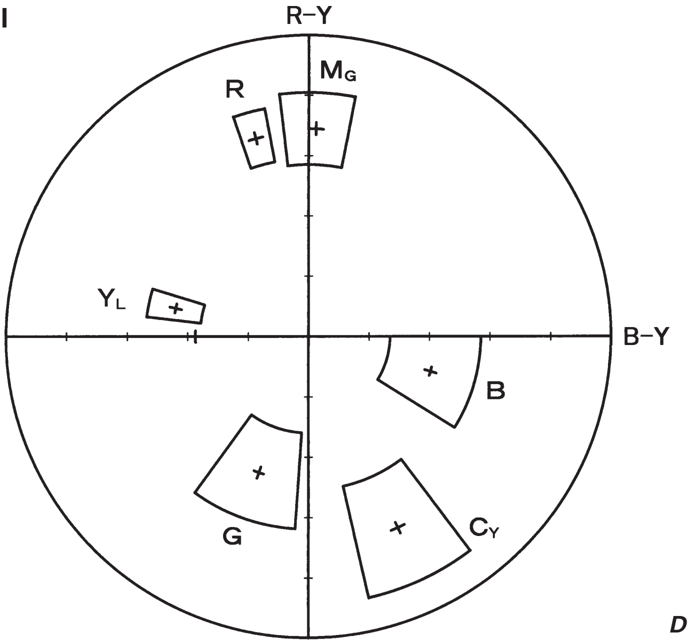
〈OPTICAL AXIS FRAME〉


0
337.5
22.5
8
7
1
292.5
67.5
270
6
2
90
247.5
112.5
5
3
4
202.5
157.5
180

Take a copy of CAMERA COLOR REPRODUCTION FRAME and Parts referencesheets with a clear sheet for use.

〈FOR CAMERA COLOR REPRODUCTION ADJUSTMENT〉

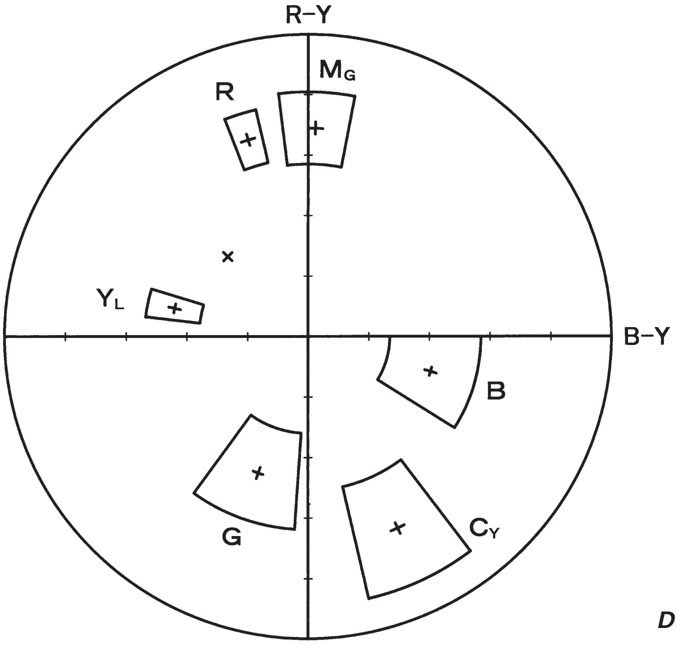
For NTSC model


R–Y
MG
R
YL
B–Y
B
G
CY

DCR-PC1

Take a copy of CAMERA COLOR REPRODUCTION FRAME and Parts referencesheets with a clear sheet for use.

For PAL model


R–Y
MG
R
YL
B–Y
B
G
CY

DCR-PC1E

9-974-094-11

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Personal A&V Products Company

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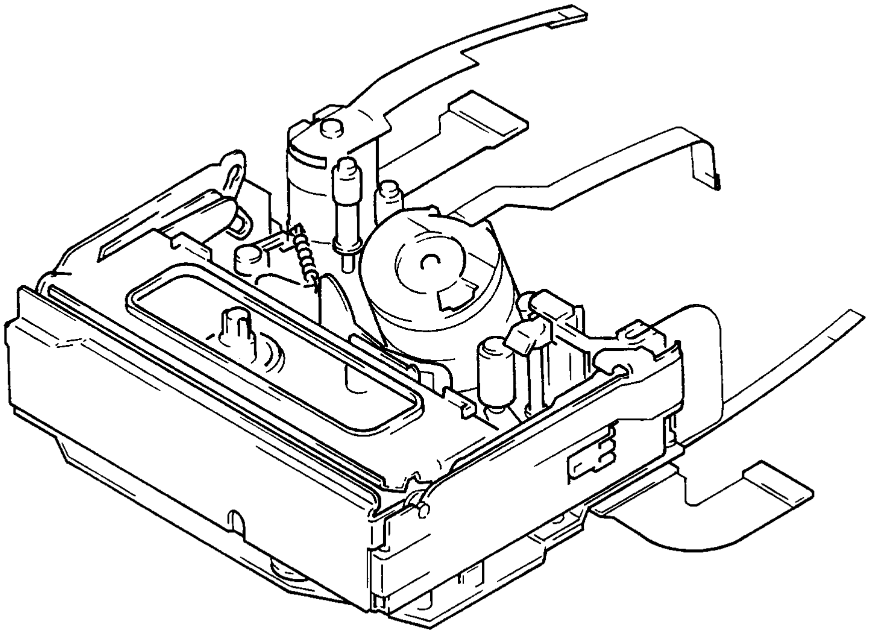
DV MECHANICAL ADJUSTMENT MANUAL I

D MECHANISM

File with the SERVICE MANUAL.

Mini DV Digital Video Cassette



Digital MECHANISM

SONY®

MICROFILM

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1. PREPARATION FOR MECHANICAL CHECK, ADJUSTMENT AND MAINTENANCE

PREPARATION

- For removal of the cabinet and boards, refer to "Disassembly" in each service manual.

- When the adjustment and maintenance for the mechanical section are performed, select the condition of mechanical deck using mode selector II for easy use to operate. Refer to "2-5. How to handle the mode selector II" to select the following each ☐ mode.

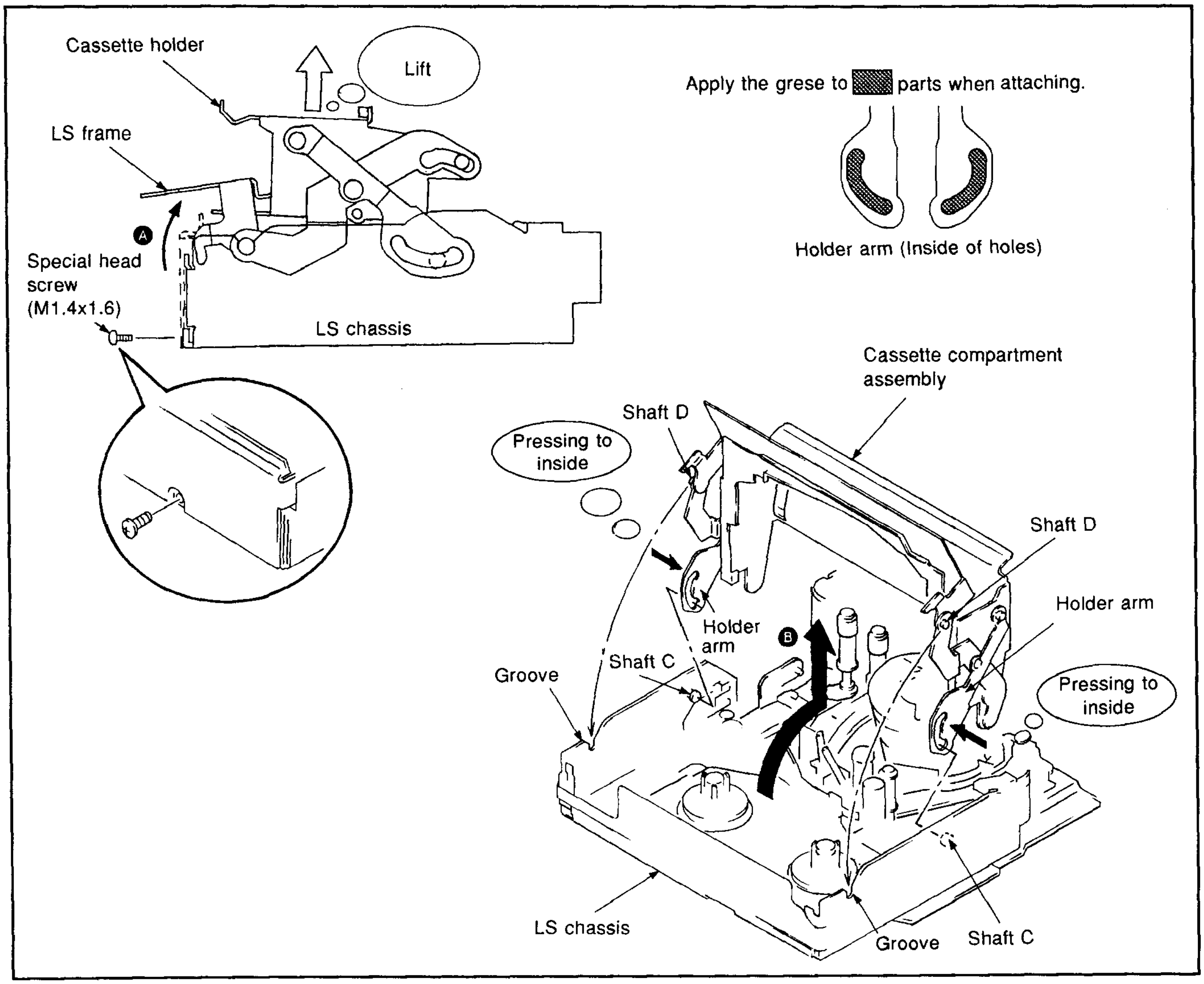
1-1. CASSETTE COMPARTMENT ASSEMBLY

1. Removing

1) Set the USE—EJ mode.
2) Remove the screw.
3) Lift the cassette holder, and move the LS frame to the direction of arrow Ⓐ.
4) Lift the cassette compartment assembly to the direction of arrow Ⓑ, then remove pressing the left and right holder arms to inside.

2. Attaching

1) Set the USE—EJ mode.
2) Apply the grease (two positions, 1.5 mm dia.) to the cassette compartment assembly, then attach it to the shaft C pressing the holder arms to inside.
   Grease: Floil Grease (SG-941)
3) Pull down the cassette compartment assembly to front, attach the shaft D to a groove of LS chassis, then pull down the LS frame to front.
4) Attach the screw.
   Fixing torque: 0.0588 N • m (0.6 kg • cm)



Cassette holder
Lift
LS frame
Ⓐ
Special head screw (M1.4x1.6)
LS chassis
Apply the grese to ▨ parts when attaching.
Holder arm (Inside of holes)
Cassette compartment assembly
Shaft D
Pressing to inside
Shaft D
Holder arm
Holder arm
Ⓑ
Shaft C
Groove
Pressing to inside
LS chassis
Groove
Shaft C

2. PERIODIC CHECK AND MAINTENANCE

- Carry out the following maintenance and periodic checks not only to fully display the functions and performance of the set, but also for the equipment and tape. After repairing, service the set as follows, regardless of the length of use.

2-1. CLEANING OF ROTARY DRUM ASSEMBLY

1) Press a wiping cloth (Ref No. J-2) moistened with cleaning fluid (Ref No. J-1) against the rotary drum assembly gently, and clean it while rotating the upper rotary drum assembly slowly with your finger in the counterclockwise direction.

Note: Do not rotate the motor on power or rotate the upper rotary drum assembly in the clockwise direction with your finger. The head tip will also be damaged if the wiping cloth is moved perpendicularly against it. Therefore, be sure to follow the above instructions when cleaning the rotary drum assembly.

2-2. CLEANING OF TAPE PATH SYSTEM (See Fig. 1.)

1) In the EJECT mode, clean the tape path systems (TG-1, 2, 3, 4, 5, 6, 7, capstan) and the lower drum using a superfine applicator (Ref No. J-3) moistened with cleaning fluid.

Note 1: Make sure that no oil or grease of the link mechanisms sticks to the superfine applicator (Ref No. J-3.)

Note 2: Do not use a applicator moistened with alcohol to the other guide cleaning. But clean the pinch roller using alcohol.

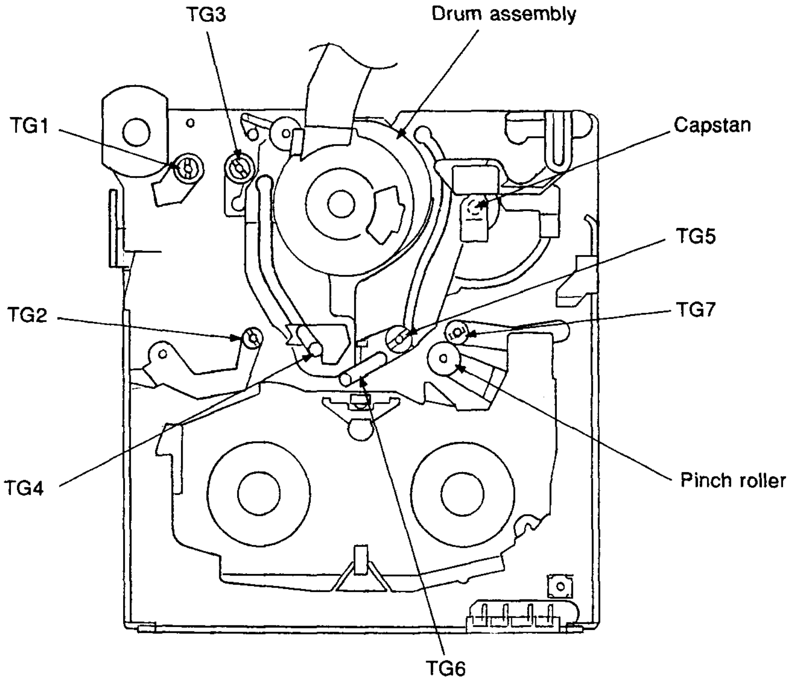


Fig. 1.

2-3. PERIODIC CHECKS

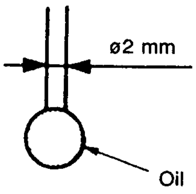
Location of Maintenance and Check		Hours of Use (H)										Remarks
		500	1000	1500	2000	2500	3000	3500	4000	4500	5000	
	Cleaning of tape path surface	○	○	○	○	○	○	○	○	○	○	Be careful of the oil
	Cleaning and degaussing of rotary drum assembly	○	○	○	○	○	○	○	○	○	○	Be careful of the oil
Driving System	Relay belt	—	☆	—	☆	—	☆	—	☆	—	☆	3-748-734-01
	Capstan shaft (Bearing)	—	☆	—	☆	—	☆	—	☆	—	☆	Make sure that no oil gets on the tape path surface.
	Conversion gear shaft Relay pulley shaft	—	◎	—	◎	—	◎	—	◎	—	◎	
	Loading motor	—	☆	—	☆	—	☆	—	☆	—	☆	A-7026-007-A
Performance Confirmation	Abnormal noise	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	
	Back tension measurement	—	☆	—	☆	—	☆	—	☆	—	☆	
	Brake system	—	☆	—	☆	—	☆	—	☆	—	☆	
	FWD RVS } Torque measurement	—	☆	—	☆	—	☆	—	☆	—	☆	

○ : Cleaning ◎ : Oil ☆ : Confirmation

Note: When overhauling, refer to the checks above and replace parts.

Note: Oiling

- Be sure to use the specified oil. (If the viscosity of the oil is different, etc., problems may result.)
  Oil: Part No. 7-661-018-18
  (Mitsubishi Diamond Oil Hydrofluid NT-68)
- When lubricating bearings, be sure to use oil free from dust, etc. (If oil containing dusts, etc. is used, bearings may wear out, burn, etc.)
- A drop of oil means the amount on the tip of a 2 mm diameter stick as shown in the Fig 5.
- FLOIL Grease (SG-941): Part No. 7-662-001-39



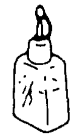
2-4. SERVICE JIGS LIST

Ref. No.	Name	Part No.	Fixtur No.	Usage, Others Application, etc
J-1	Cleaning fluid	Y-2031-001-0		
J-2	Wiping cloth	7-741-900-53		
J-3	Super fine applicator (Made by NIPPON APPLICATOR (P752D))			
J-4	Mirror (Small oval type)	J-6080-840-A	GD-2038	Tape path
J-5	Tracking tape (XH2-1) (NTSC/PAL)	8-967-997-01		Tape path
J-6	RVS torque tape	J-6082-327-A		
J-7	FWD torque (D mechanism) & RVS back tension (E mechanism) tape	J-6082-328-A		
J-8	FWD back tension tape (D/E mechanism)	J-6082-329-A		
J-9	Cassette standerd plate	J-6082-330-A		
J-10	Reel standard plate	J-6082-331-A		
J-11	Dummy drum (D mechnism)	J-6082-332-A		
J-12	TG1 preset base (D mechanism)	J-6082-333-A		
J-13	TG5 preset base (D mechanism)	J-6082-334-A		
J-14	Washer fixture ø0.8	J-6082-233-A		
J-15	Torque driver	J-9049-330-A		
J-16	Screwdriver for tape path	J-6082-026-A		For adjusting tape guide
J-17	Adjusting remote commander (RM-95 remodeled partly) Note1	J-6082-053-B		
J-18	Mode selector II	J-6082-282-A		For all models
J-19	Mode selector II change connctor board	J-6082-335-A		
J-20	Screw lock G (1401B)	7-432-114-11		
J-21	FWD/BACK Tension adjustment driver	J-6082-187-A		For adjusting FWD position and FWD back tension

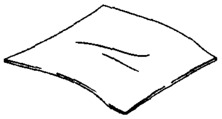
Other equipment used
- Oscilloscope

Note 1: If the micro processor IC in the adjusting remote commander is not the new micro processor (UPD7503G-C56-12), the pages cannot be switched. In this case, replase with the new micro processor (8-759-148-35).

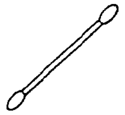
J-1



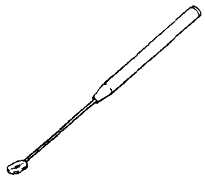
J-2



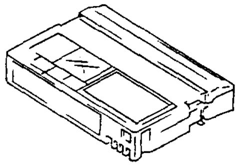
J-3



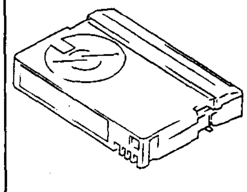
J-4



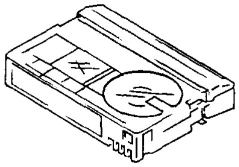
J-5



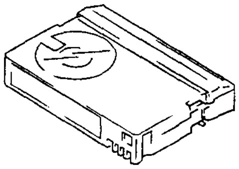
J-6



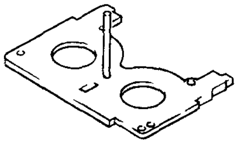
J-7



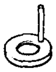
J-8



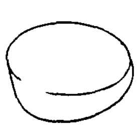
J-9



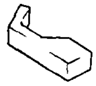
J-10



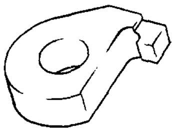
J-11



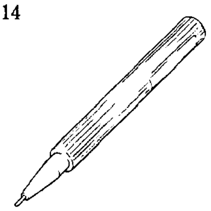
J-12



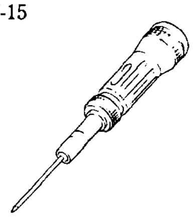
J-13



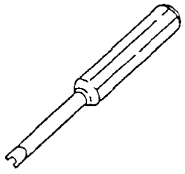
J-14



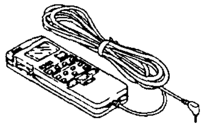
J-15



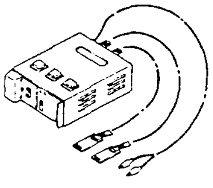
J-16



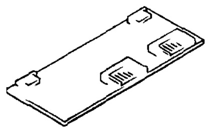
J-17



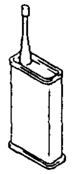
J-18



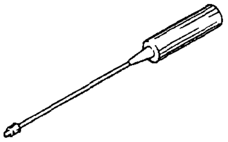
J-19



J-20



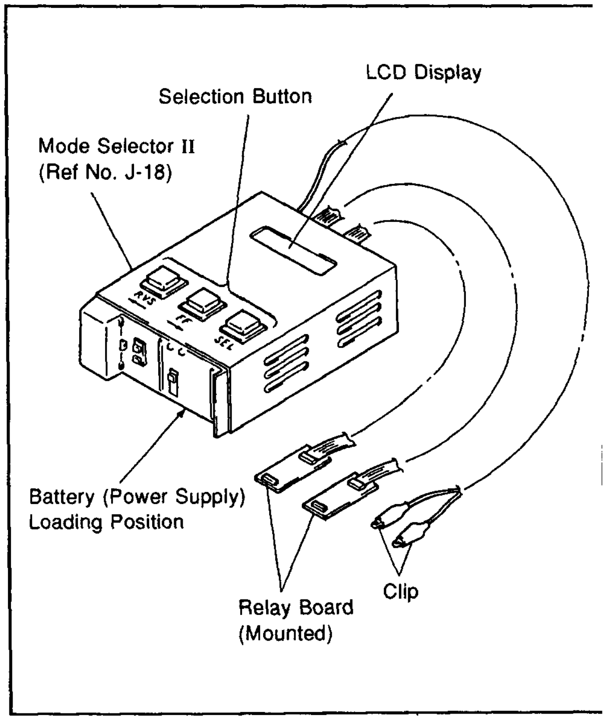
J-21



2-5. USE OF MODE SELECTOR II

2-5-1. Outline

This unit is a mechanism drive tool which supplements the maintenance of each mechanism deck. Its functions are described below.


LCD Display
Selection Button
Mode Selector II
(Ref No. J-18)
RVS
FF
SEL
Battery (Power Supply)
Loading Position
Relay Board
(Mounted)
Clip

1. **Manual test**

   A mode which drives the motor only while the switch is ON. It enables the operator to control the motor as desired.

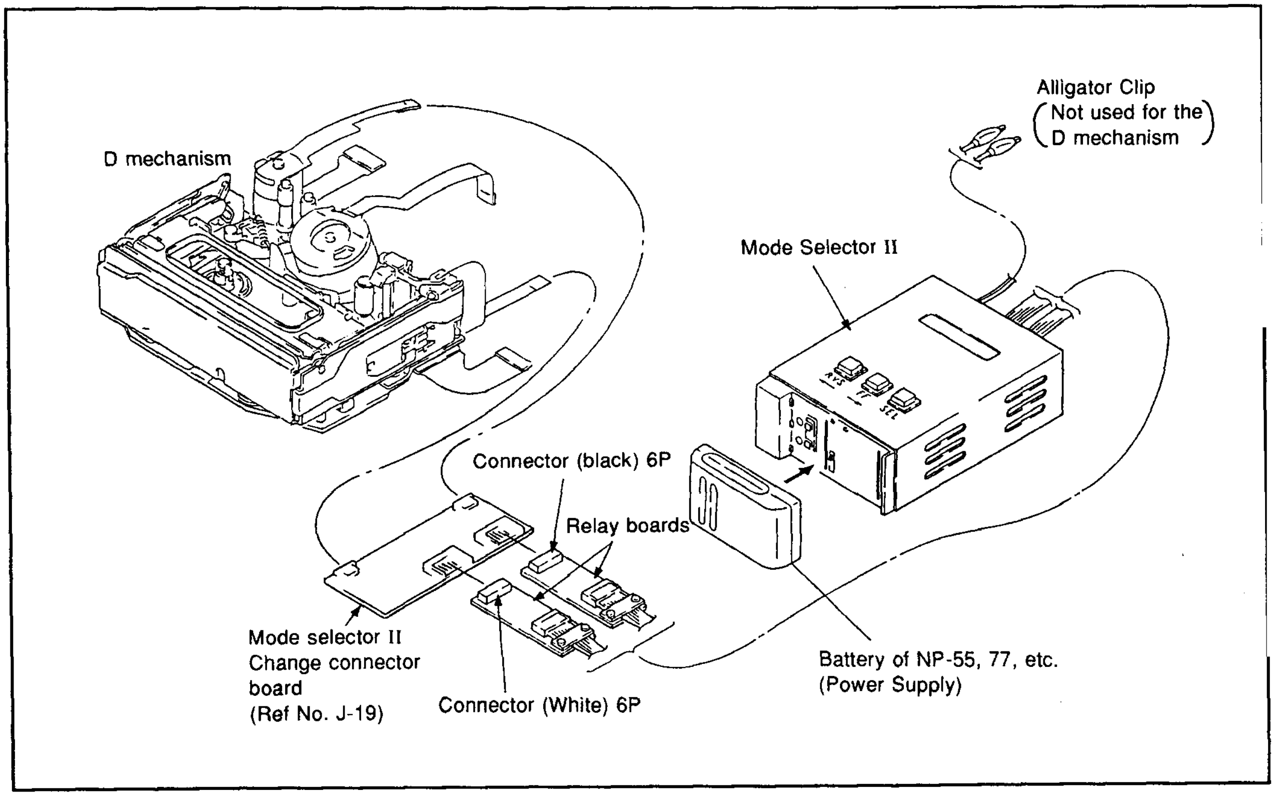
2. **Step test**

   A mode which drives the motor until the current condition detected by the sensor changes to another condition. It enables the movements made by the motor in each operation to be controlled while being checked.

3. **Auto test**

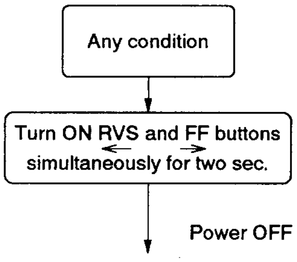
   A mode that checks if the mechanism operates normally according to the condition shift table recorded in the unit for each mechanism deck. All the conditions of the decks are checked through a series of operations.
   An error message is displayed if incorrect shifts and conditions are detected and operations are stopped.

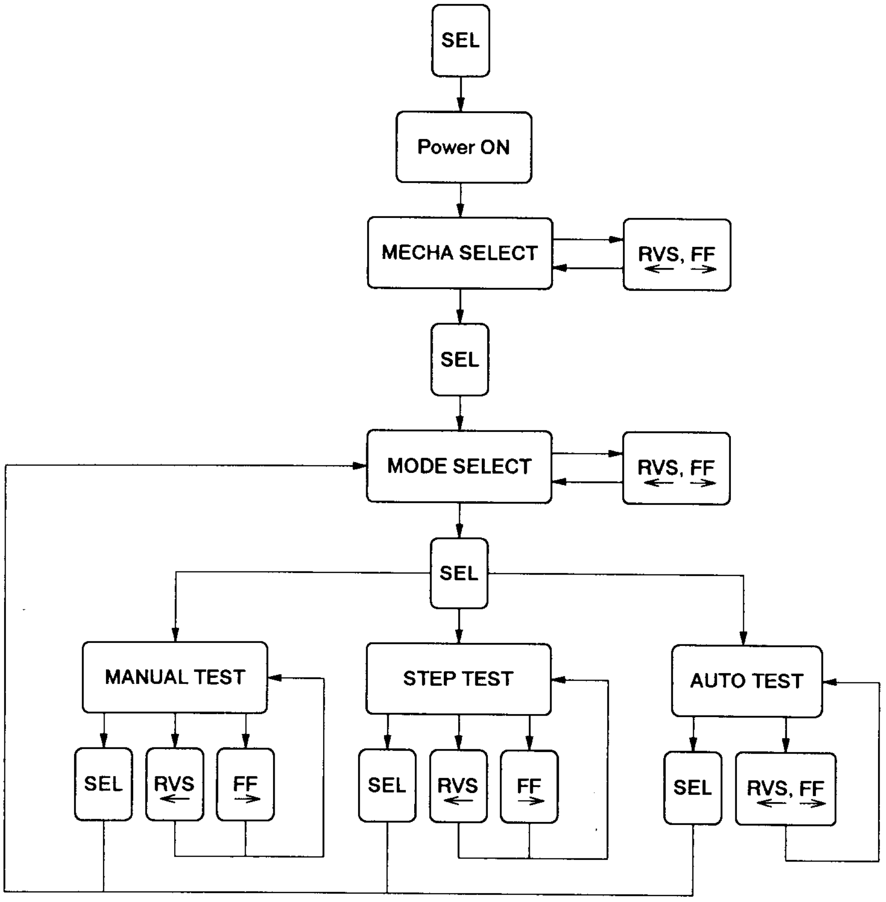
Mode Selector II (J-6082-282-A) Connection


D mechanism
Alligator Clip
(Not used for the D mechanism)
Mode Selector II
RVS
FF
SEL
Connector (black) 6P
Relay boards
Mode selector II
Change connector
board
(Ref No. J-19)
Connector (White) 6P
Battery of NP-55, 77, etc.
(Power Supply)

2-5-2. Operation

1. Operation flow chart

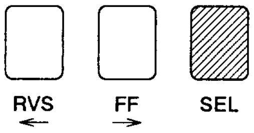

Any condition
Turn ON RVS and FF buttons simultaneously for two sec.
Power OFF


SEL
Power ON
MECHA SELECT
RVS, FF
SEL
MODE SELECT
RVS, FF
SEL
MANUAL TEST
STEP TEST
AUTO TEST
SEL
RVS
FF
SEL
RVS
FF
SEL
RVS, FF

(Excluding the K mechanism)

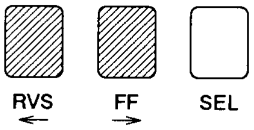
2. Turning ON the mode selector II

To turn ON the power supply, turn on the SEL button.



3. Turning OFF the mode selector II

To turn OFF the power supply, turn on the RVS and FF buttons simultaneously for more two seconds.



4. Mechanism selection

Immediately after the power supply has been turned on, "MECHA SELECT" will be displayed on the LCD. Select the desired mechanism using the $\underset{\leftarrow}{\text{RVS}}$ and $\underset{\rightarrow}{\text{FF}}$ buttons, and press the SEL button to complete the selection. (Fig. I shows the D mechanism.)

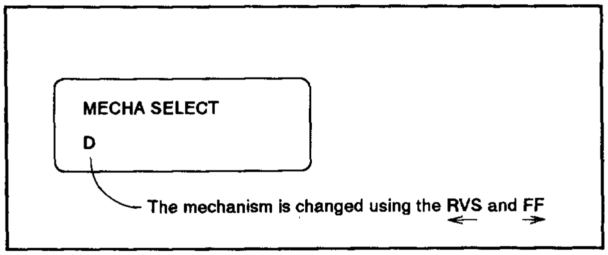

MECHA SELECT
D
The mechanism is changed using the RVS and FF
←
→

Fig. I

5. Mode selection

Select the test-"MANUAL", "STEP", and "AUTO"- to be executed.
Select the desired mode on the screen using the $\underset{\leftarrow}{\text{RVS}}$ and $\underset{\rightarrow}{\text{FF}}$ buttons, and press the SEL button to complete the selection.

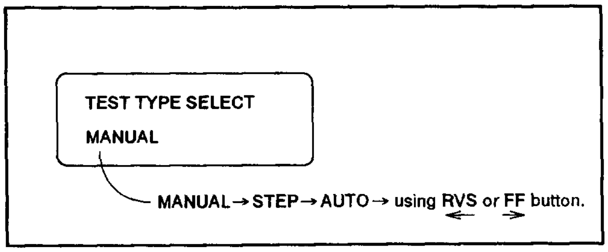

TEST TYPE SELECT
MANUAL
MANUAL→STEP→AUTO→ using RVS or FF button.
←
→

Fig. II

6. Manual test

A mode that drives the motor only when the $\underset{\leftarrow}{\text{RVS}}$ or $\underset{\rightarrow}{\text{FF}}$ button is pressed.

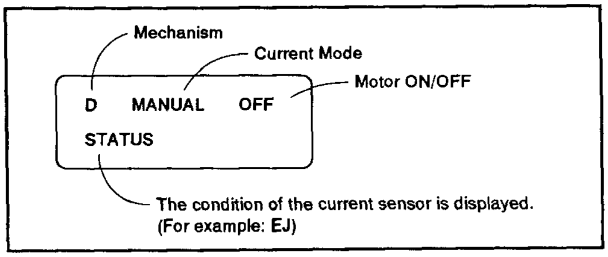

Mechanism
Current Mode
Motor ON/OFF
D MANUAL OFF
STATUS
The condition of the current sensor is displayed.
(For example: EJ)

Fig. III

7. Step test

A mode that drives the motor until the direction of motor operations is set using the $\underset{\leftarrow}{\text{RVS}}$ and $\underset{\rightarrow}{\text{FF}}$ buttons and the current condition is changed.

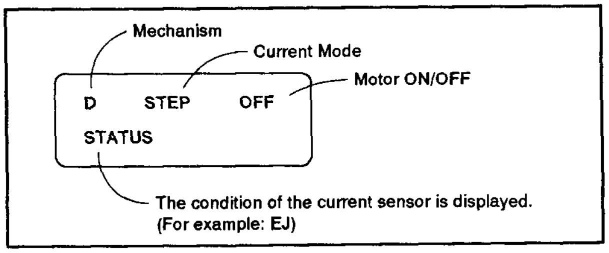

Mechanism
Current Mode
Motor ON/OFF
D STEP OFF
STATUS
The condition of the current sensor is displayed.
(For example: EJ)

Fig. IV

8. Auto test

Each mechanism deck is checked for its recorded operation sequence. The check is executed by comparing the sensor signals generated in the operation sequence with the recorded operation sequence.
The same operation is carried out when the $\underset{\leftarrow}{\text{RVS}}$ or $\underset{\rightarrow}{\text{FF}}$ button is turned on.

Note: Sometimes the AUTO TEST spoils sequence due to a small range of $\boxed{\text{S. OFF}}$, but this is not a D mechanical trouble.

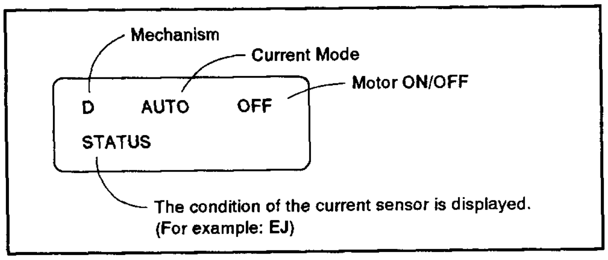

Mechanism
Current Mode
Motor ON/OFF
D AUTO OFF
STATUS
The condition of the current sensor is displayed.
(For example: EJ)

Fig. V

Mechanism condition (position) shifting order

After selecting the mechanism, select one mode from the two test modes, excluding the AUTO test. Then press the $\underset{\leftarrow}{\text{RVS}}$ or $\underset{\rightarrow}{\text{FF}}$ button and specify the mechanism condition (position). (Displayed at the STATUS area)
EJ↔USE↔S. OFF↔D. ON↔LE↔STOP↔FF↔
R/P↔RVS

Code \ MD name					D mechanism
A	B	C	D		
1	0	1	0	1	EJ
1	1	1	0	2	USE
1	1	0	0	3	S. OFF
1	1	0	1	4	D. ON
1	0	0	1	5	LE
0	1	0	1	6	STOP
0	1	1	1	7	FF
1	0	1	1	8	R/P
0	0	1	1	9	RVS

9. Battery alarm display

When the battery voltage (power supply unit of the unit) drops, this alarm is displayed, no operations can be carried out and the battery must be changed.

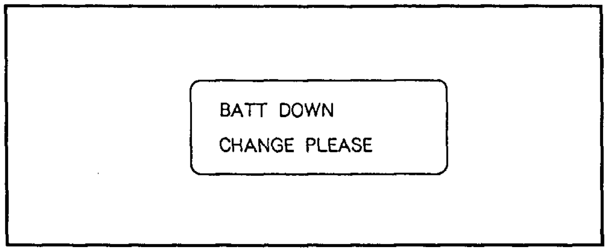

BATT DOWN
CHANGE PLEASE

Fig. VI

3. MECHANISM SECTION CHECKS, ADJUSTMENTS AND REPLACEMENTS

3-1. DRUM ASSEMBLY (MOTOR FPC ASSEMBLY AND ELASTIC CONNECTORS)

1. Removing

<Motor FPC assembly and elastic connectors>

- Remove the two screws to remove the motor FPC assembly and elastic connectors.

<Drum assembly>

- Remove the three of drum fitting screw assembly to remove the drum assembly.

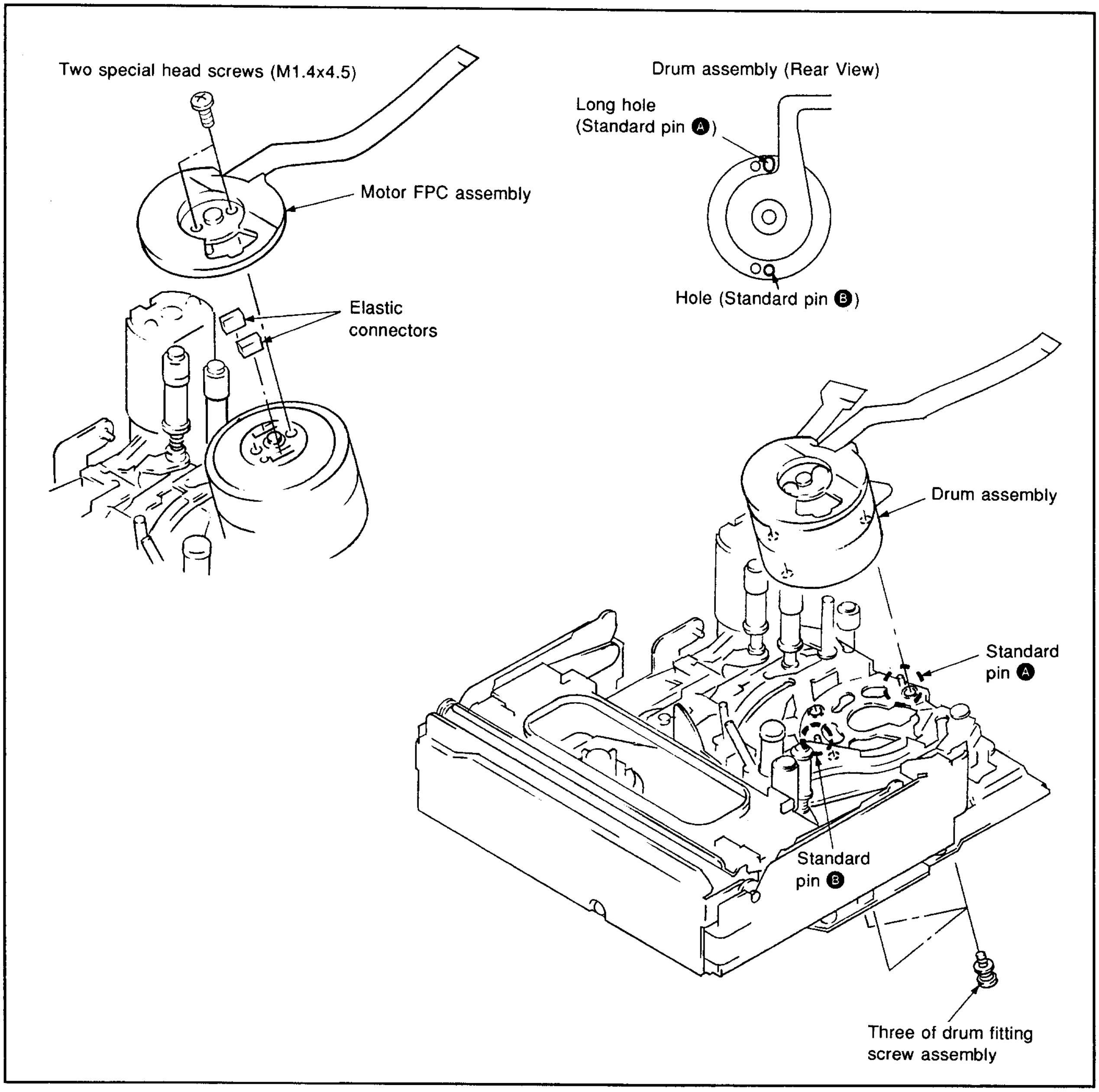
2. Attaching

<Motor FPC assembly and elastic connectors>

1) Attach the elastic connectors.
2) Attach the motor FPC assembly with two screws. (Pay attention to adjust the position of holes.)
   Fixing torque: 0.0490 N • m (0.5 kg • cm)

<Drum assembly>

1) Attach the holes on the rear side of drum assembly to standard pin. (Pay attention to the direction of the drum.)
2) Attach the three of drum fitting screw assembly.
   Fixing torque: 0.0392 N • m (0.4 kg • cm)
3) Refer to 2-1., perform the cleaning of drum assembly.
4) Carry out the tape path adjustment. (Refer to "4. TAPE PATH ADJUSTMENT".)


Two special head screws (M1.4x4.5)
Motor FPC assembly
Elastic connectors
Drum assembly (Rear View)
Long hole (Standard pin Ⓐ)
Hole (Standard pin Ⓑ)
Drum assembly
Standard pin Ⓐ
Standard pin Ⓑ
Three of drum fitting screw assembly

3-2. HC ASSEMBLY (HC ROLLER ASSEMBLY, HC SLIDE ASSEMBLY AND HC ARM ASSEMBLY)

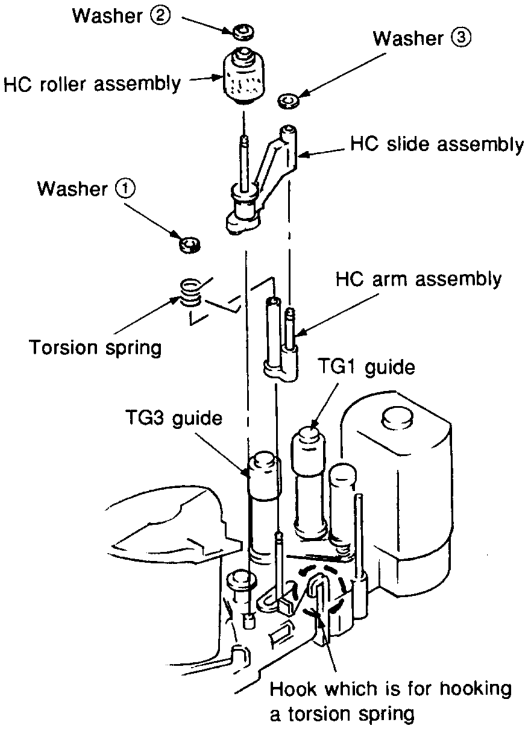
1. Removing

1) Remove the washer ①, then remove the HC arm assembly and torsion spring.
2) Remove the washer ② and remove the HC roller assembly.
3) Remove the washer ③ and remove the HC slide assembly.

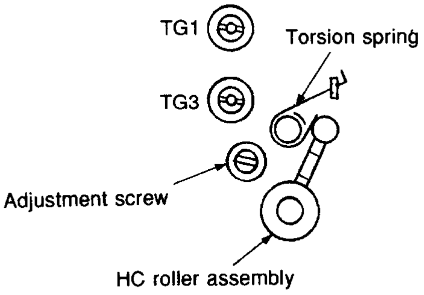
2. Attaching

1) Attach the HC slide assembly to the HC arm assembly with the washer ③.
2) Attach the HC roller assembly to the HC slide assembly with the washer ②.
3) Attach the torsion spring and HC assembly with the washer ①.

Note: Pay attention to attach the torsion spring.


Washer ②
Washer ③
HC roller assembly
HC slide assembly
Washer ①
HC arm assembly
Torsion spring
TG1 guide
TG3 guide
Hook which is for hooking a torsion spring

Hooking the torsion spring


TG1
Torsion spring
TG3
Adjustment screw
HC roller assembly

3-3. TG1 GUIDE

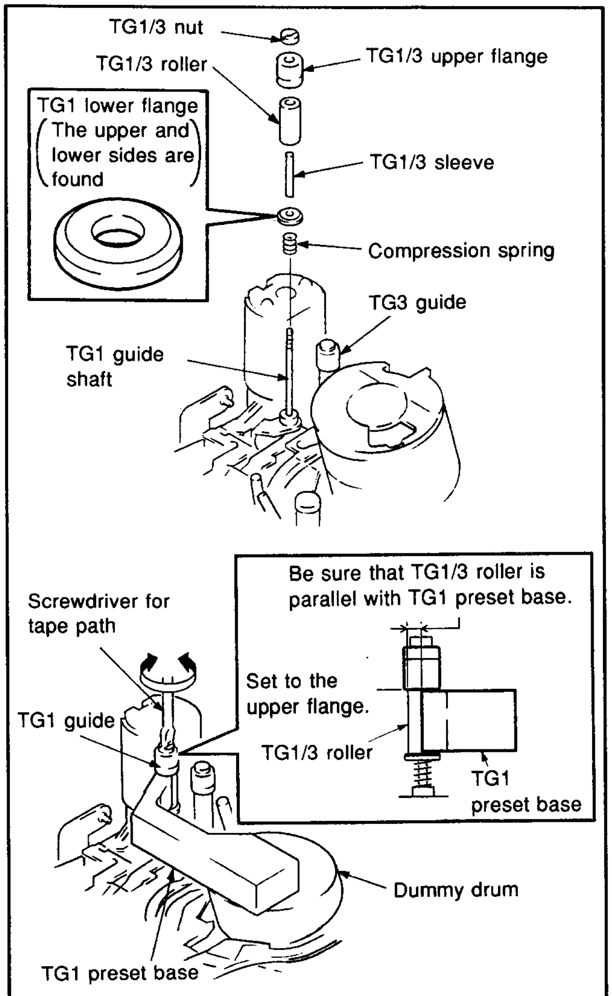
1. Removing

- Remove the TG1/3 nut with a screwdriver for tape path (Ref No. J-16), then remove in the order of TG1/3 upper flange, TG1/3 roller, TG1/3 sleeve, TG1 lower flange and compression spring.

2. Attaching

1) Attach in the order of compression spring TG1 lower flange, TG1/3 sleeve, TG1/3 roller, TG1/3 upper flange and TG1/3 nut.
2) Refer to 3-1. to remove the drum assembly and attach the dummy drum (Ref No. J-11).
3) Put the TG1 preset base (Ref No. J-12) on the dummy drum, adjust the TG1/3 nut with a screwdriver for tape path (Ref No. J-16) to meet the height of TG1/3 upper flange and a jig.
4) Refer to 3-1. and attach the drum assembly after removing each jig.
5) Refer to 2-2. clean the TG1 guide.
6) Adjust the tape path.
(Refer to "4. TAPE PATH ADJUSTMENT".)

Note: If the TG1 guide shaft is damaged, it will be necessary to replace the mechanical chassis block assembly. (Refer to "5. EXPLODED VIEWS".)


TG1/3 nut
TG1/3 roller
TG1/3 upper flange
TG1 lower flange
(The upper and lower sides are found)
TG1/3 sleeve
Compression spring
TG3 guide
TG1 guide shaft
Screwdriver for tape path
TG1 guide
Set to the upper flange.
TG1/3 roller
TG1 preset base
Dummy drum
TG1 preset base

Be sure that TG1/3 roller is parallel with TG1 preset base.

3-4. TG3 GUIDE

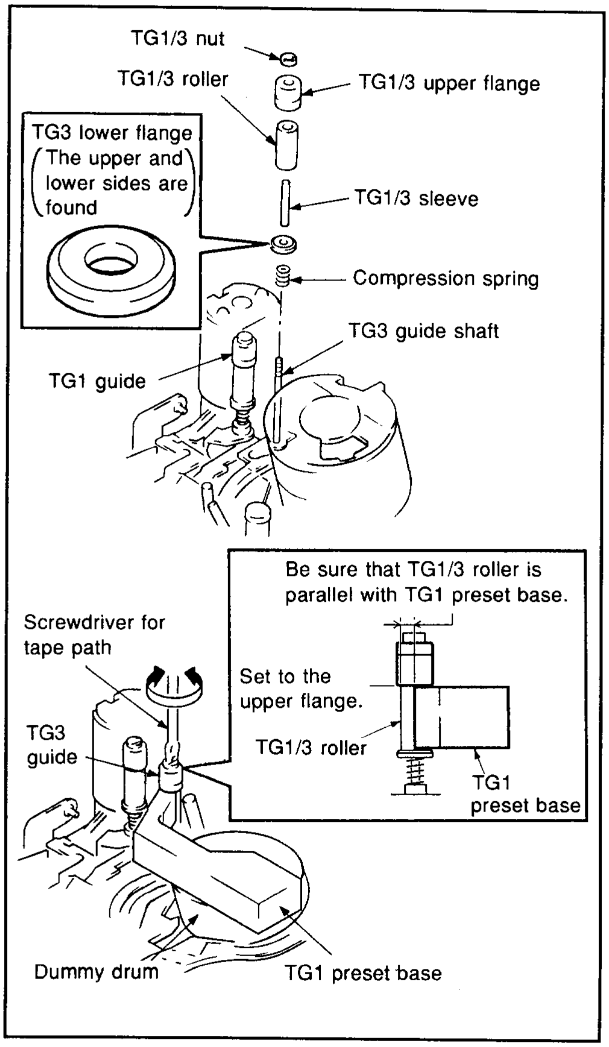
1. Removing

- Remove the TG1/3 nut with a screwdriver for tape path (Ref No.J-16), then remove in the order of TG1/3 upper flange, TG1/3 roller, TG1/3 sleeve, TG3 lower flange and compression spring.

2. Attaching

1) Attach in the order of compression spring, TG3 lower flange, TG1/3 sleeve, TG1/3 roller, TG1/3 upper flange and TG1/3 nut.
2) Refer to 3-1. to remove the drum assembly and attach the dummy drum (Ref No. J-11).
3) Put the TG1 preset base (Ref No.J-12) on the dummy drum, adjust the TG1/3 nut with a screwdriver for tape path (Ref No. J-16) to meet the TG1/3 upper flange and a jig.
4) Refer to 3-1. to attach the drum assembly after removing each jig.
5) Refer to 2-2. to clean the TG3 guide.
6) Adjust the tape path.
   (Refer to "4. TAPE PATH ADJUSTMENT".)

Note: If the TG3 guide shaft is damaged, it will be necessary to replace the mechanical chassis block assembly. (Refer to "5. EXPLODED VIEWS".)


TG1/3 nut
TG1/3 roller
TG1/3 upper flange
TG3 lower flange
(The upper and lower sides are found)
TG1/3 sleeve
Compression spring
TG3 guide shaft
TG1 guide
Be sure that TG1/3 roller is parallel with TG1 preset base.
Set to the upper flange.
TG1/3 roller
TG1 preset base
Screwdriver for tape path
TG3 guide
Dummy drum
TG1 preset base

3-5. TG7 GUIDE

1. Removing

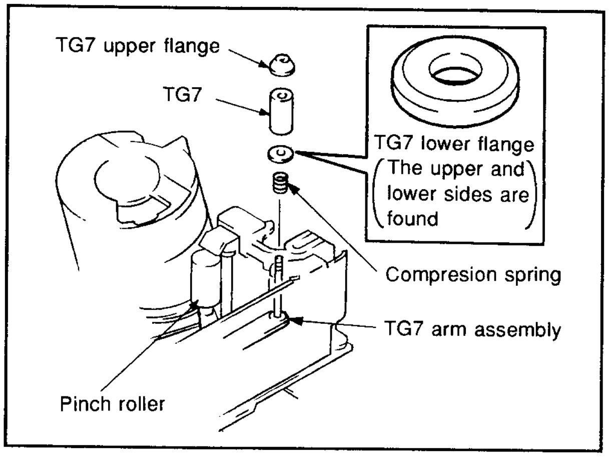
- Remove the TG7 upper flange with a screwdriver for tape path (Ref No. J-16), then remove in the order of TG7, TG7 lower flange and compression spring.

2. Attaching

1) Attach in the order of compression spring, TG7 lower flange, TG7 and TG7 upper flange.

Note: Fix temporarily not to come out the TG7 guide shaft from the TG7 upper flange.

2) Refer to 2-2. to clean the TG7 guide.
3) Adjust the tape path.
   (Refer to "4. TAPE PATH ADJUSTMENT".)


TG7 upper flange
TG7
TG7 lower flange
(The upper and lower sides are found)
Compresion spring
TG7 arm assembly
Pinch roller

3-6. S POSITIONING AND T POSITIONING

1. Removing

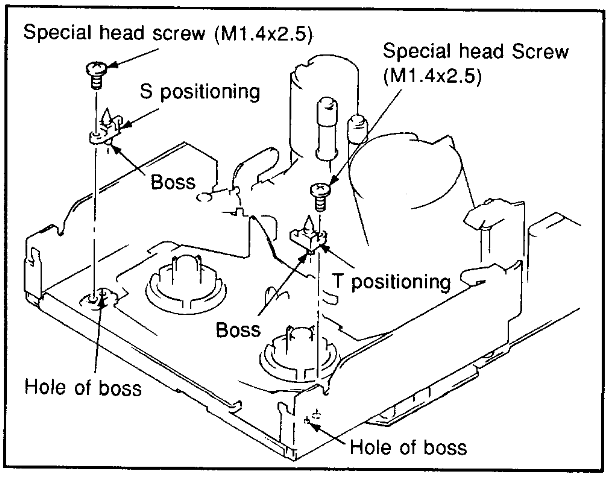
1) Refer to 1-1. to lift the cassette compartment assembly.
2) Remove each screw, then remove the S positioning and T positioning.

2. Attaching

1) Attach the S positioning and T positioning with screws.
   Fixing torque: 0.0588 N • m (0.6 kg • cm)

Note: Pay attention to adjust the position of each positioning and side S or T.

2) Refer to 1-1. to attach the cassette compartment assembly.


Special head screw (M1.4x2.5)
Special head Screw (M1.4x2.5)
S positioning
Boss
T positioning
Boss
Hole of boss
Hole of boss

3-7. LOCK LEVER AND SLIDER FOLLOWER

1. Removing

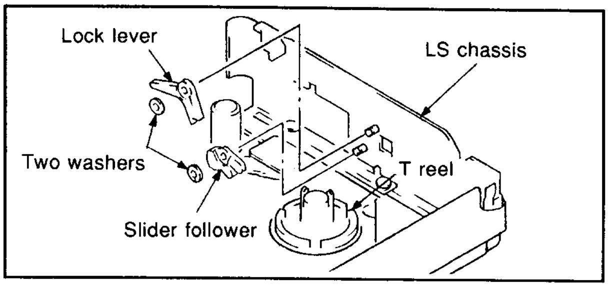
1) Refer to 1-1. to lift the cassette compartment assembly.
2) Remove each washer, then remove in the order of lock lever and slider follower.

2. Attaching

1) Attach in order of slider follower and lock lever with washers.

Note: Pay attention to the direction and attaching position of lock lever and slider follower.

2) Refer to 1-1. to attach the cassette compartment assembly.


Lock lever
LS chassis
Two washers
T reel
Slider follower

3-8. LM MOTOR ASSEMBLY

1. Removing

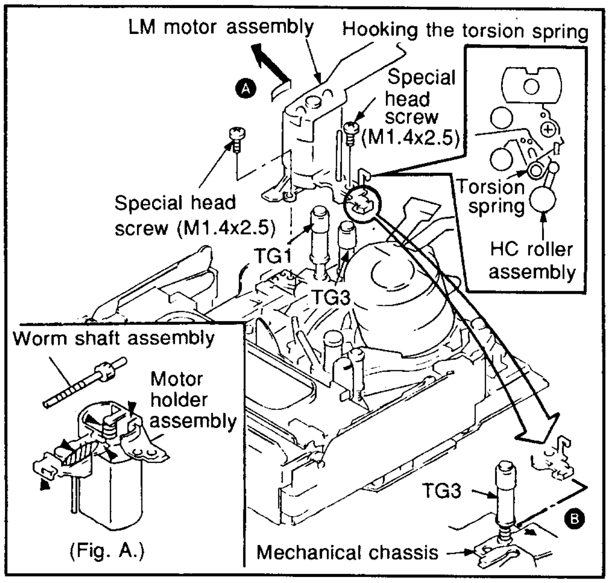
1) Set the LE—STOP mode.
2) Remove the two of screws to remove the LM motor assembly in the direction of arrow Ⓐ.

2. Attaching

1) Set the LE—STOP mode.
2) Attach the LM motor assembly with the two of screws in the direction of arrow Ⓑ.
   Fixing torque: 0.0588 N • m (0.6 kg • cm)
3) Hook the torsion spring of HC roller assembly.

<Note for replacement of the warm shaft assembly>

- Apply the grease which is applied to the warm shaft assembly before replacement to ► (Fig. A) of the motor holder assembly.


LM motor assembly
Hooking the torsion spring
Ⓐ
Special head screw (M1.4x2.5)
Special head screw (M1.4x2.5)
Torsion spring
HC roller assembly
TG1
TG3
Worm shaft assembly
Motor holder assembly
(Fig. A.)
TG3
Ⓑ
Mechanical chassis

3-9. CAPSTAN MOTOR

There is an axis compensating spacer between the capstan motor and mechanical chassis for this mechanical deck. It is necessary to remember the attached position (one of ⓐ or ⓑ) and thickness (normal: 100μm) when removing the capstan motor because the set has its own attaching position and thickness.

1. Removing

1) Set the D. ON—EJ mode.
2) Remove the screw ① to remove the FPC holder.
3) Remove the two of screw ② to remove the capstan motor.

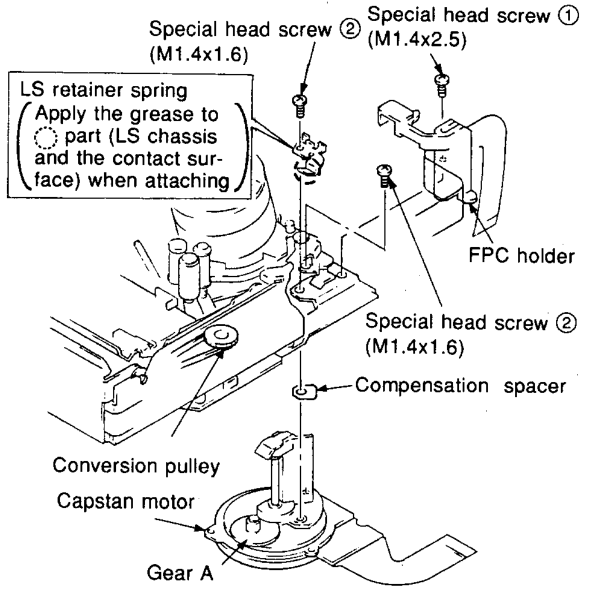
Note: Not to lose the compensating spacer. Be sure to remember the attaching position and thickness.

2. Attaching

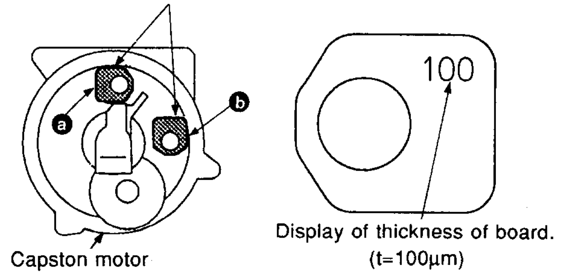
1) Set the D. ON—EJ mode.
2) Put the compensating spacer on the capstan motor.

Note: Be sure to check that it is satisfied the same condition with when removing.

3) Engage the gear A and conversion pulley.
4) Apply the grease (1.5 mm dia.) to the LS retainer spring.
   Grease: Floil Grease (SG-941)
5) Attach the capstan motor with two of screw ②.
   Fixing torque: 0.0981 N • m (1 kg • cm)
6) Attach the FPC holder with a screw ①.
   Fixing torque: 0.0588 N • m (0.6 kg • cm)


Special head screw ② (M1.4x1.6)
Special head screw ① (M1.4x2.5)
LS retainer spring
(Apply the grease to part (LS chassis and the contact surface) when attaching)
FPC holder
Special head screw ② (M1.4x1.6)
Compensation spacer
Conversion pulley
Capstan motor
Gear A

Note: The compensation spacer is attached to either ⓐ or ⓑ. Be sure to remember the attachiment position, direction and its thichness when removing.


ⓐ
ⓑ
100
Capston motor
Display of thickness of board. (t=100μm)

3-10. LED BASE ASSEMBLY

1. Removing

1) Refer to 1-1. to lift the cassette compartment assembly.
2) Remove the LED holder, then remove the LED (FP-242).
3) Remove the screw, then remove the LED base assembly in the direction of arrow.

2. Attaching

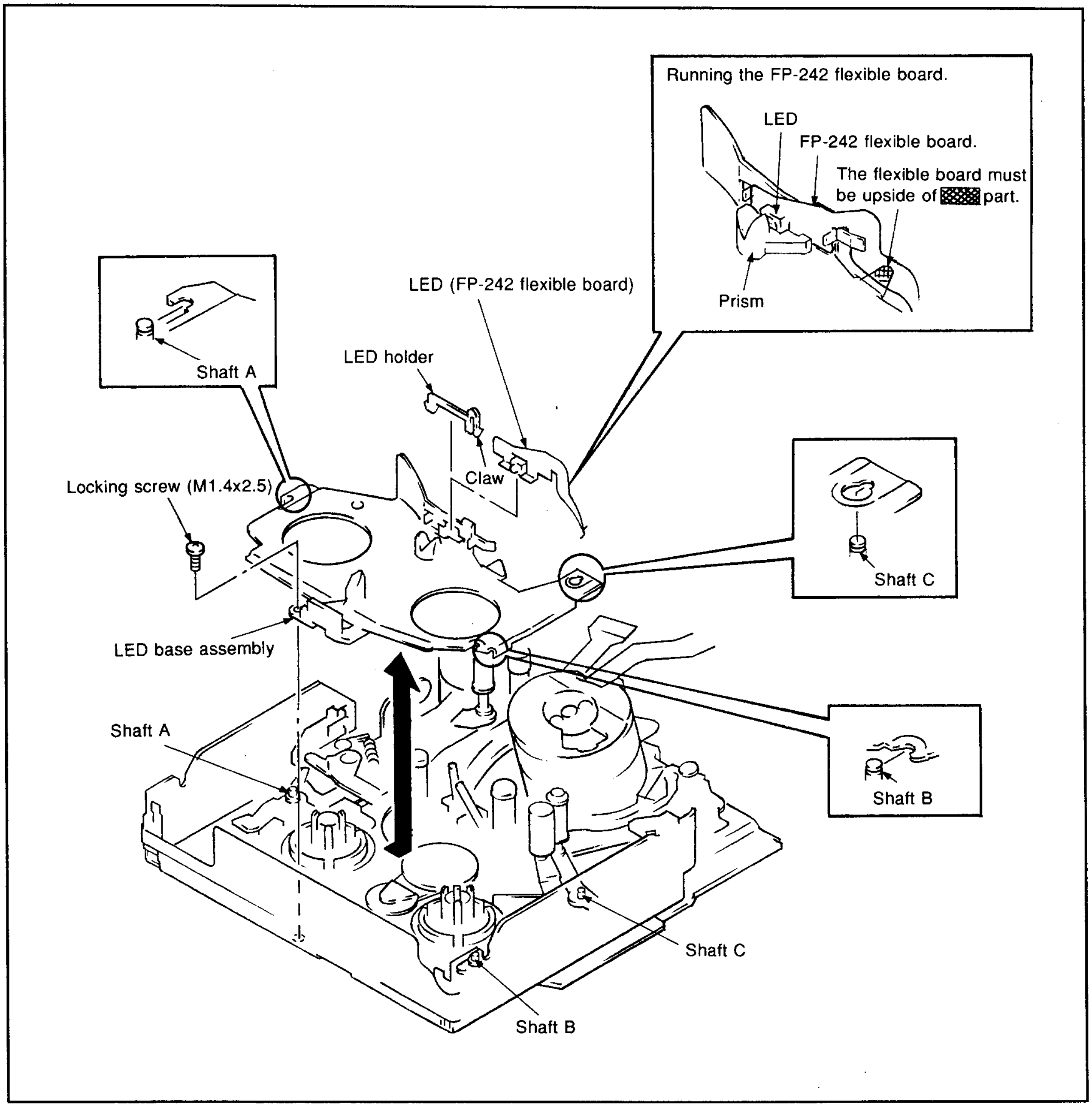
1) Hook the three notches of LED base assembly to each slit on the shaft A, B and C, so that the LED (FP-242) is not inserted.

Note: Pay attention to your fingerprints and scratch.

2) Attach the screw and apply the screw lock (Ref No. J-20).
   Fixing torque: 0.0588 N • m (0.6 kg • cm)
3) Put the LED (FP-242) in the space of prism, then remove the LED holder.

Note: Pay attention to pull around the FP-242.

4) Refer to 1-1. to attach the cassette compartment assembly.


Running the FP-242 flexible board.
LED
FP-242 flexible board.
The flexible board must be upside of ▨ part.
Prism
LED (FP-242 flexible board)
LED holder
Claw
Shaft A
Locking screw (M1.4x2.5)
LED base assembly
Shaft A
Shaft C
Shaft B
Shaft C
Shaft B

3-11. TG7 ARM ASSEMBLY

1. Removing

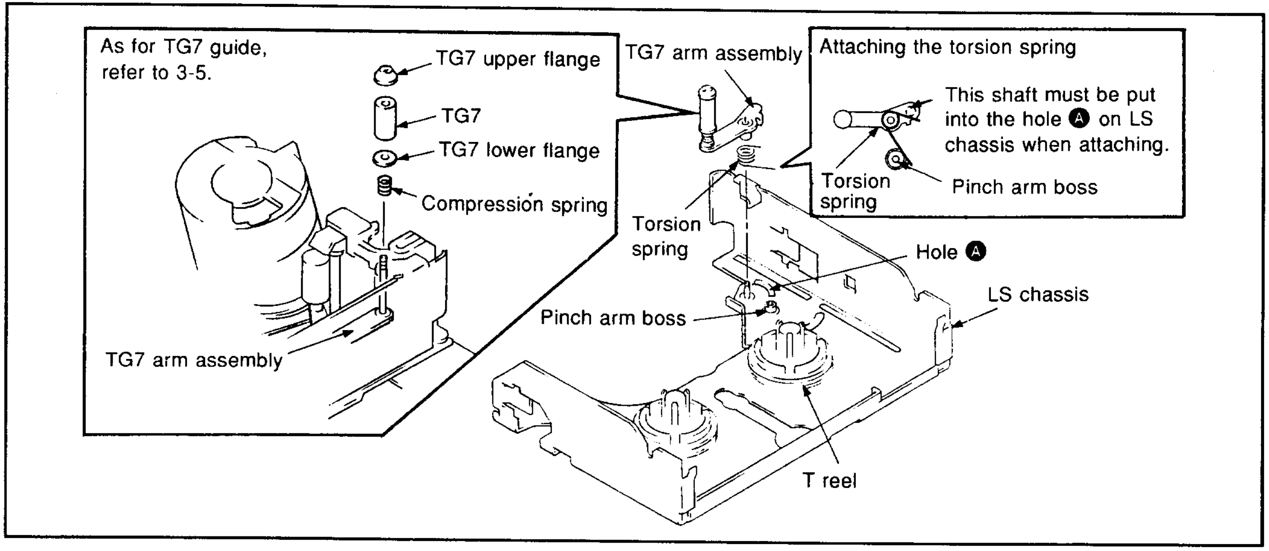
1) Refer to 1-1. to remove the cassette compartment assembly.
2) Refer to 3-10. to remove the LED base assembly.
3) Set the EJ mode, and remove in order of TG7 arm assembly and torsion spring.
4) Refer to 3-5. to remove the TG7 guide.

2. Attaching

1) Set the EJ mode.
2) Refer to 3-5. to attach the TG7 guide.
3) Attach in the order of torsion spring and TG7 arm assembly.

Note: Pay attention to attach the torsion spring.

4) Refer to 3-10. to attach the LED base assembly.
5) Refer to 1-1. to attach the cassette compartment assembly.
6) Refer to 2-2. to clean the TG7 guide.
7) Adjust the tape path.
   (Refer to "4. TAPE PATH ADJUSTMENT".)


As for TG7 guide, refer to 3-5.
TG7 upper flange
TG7
TG7 lower flange
Compression spring
TG7 arm assembly
TG7 arm assembly
Torsion spring
Pinch arm boss
Attaching the torsion spring
This shaft must be put into the hole Ⓐ on LS chassis when attaching.
Torsion spring
Pinch arm boss
Hole Ⓐ
LS chassis
T reel

3-12. PINCH ARM ASSEMBLY

Note: When the pinch arm assembly is replaced, be sure to replace the extension spring together.

1. Removing

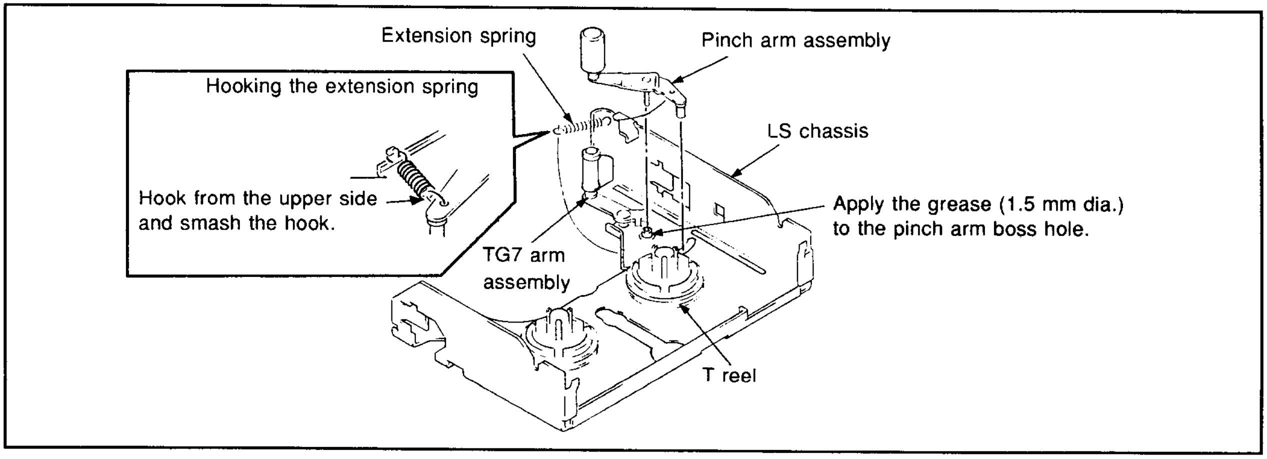
1) Refer to 1-1. to remove the cassette compartment assembly.
2) Refer to 3-10. to remove the LED base assembly.
3) Set the FF—RVS mode, remove the extension spring from the side of LS chassis, then remove the pinch arm assembly.

2. Attaching

1) Set the FF—RVS mode, apply the grease (1.5 mm dia.) to the pinch arm boss hole, attach the pinch arm assembly and hook the extension spring.
   Grease: Floil Grease (SG-941)

Note: There is a specified direction of the spring hook.

2) Refer to 3-10. to attach the LED base assembly.
3) Refer to 1-1. to attach the cassette compartment assembly.
4) Refer to 2-2. to clean the pinch roller.


Extension spring
Pinch arm assembly
Hooking the extension spring
Hook from the upper side and smash the hook.
LS chassis
Apply the grease (1.5 mm dia.) to the pinch arm boss hole.
TG7 arm assembly
T reel

3-13. T HARD BREAK, S BREAK ARM AND S HARD

1. Removing

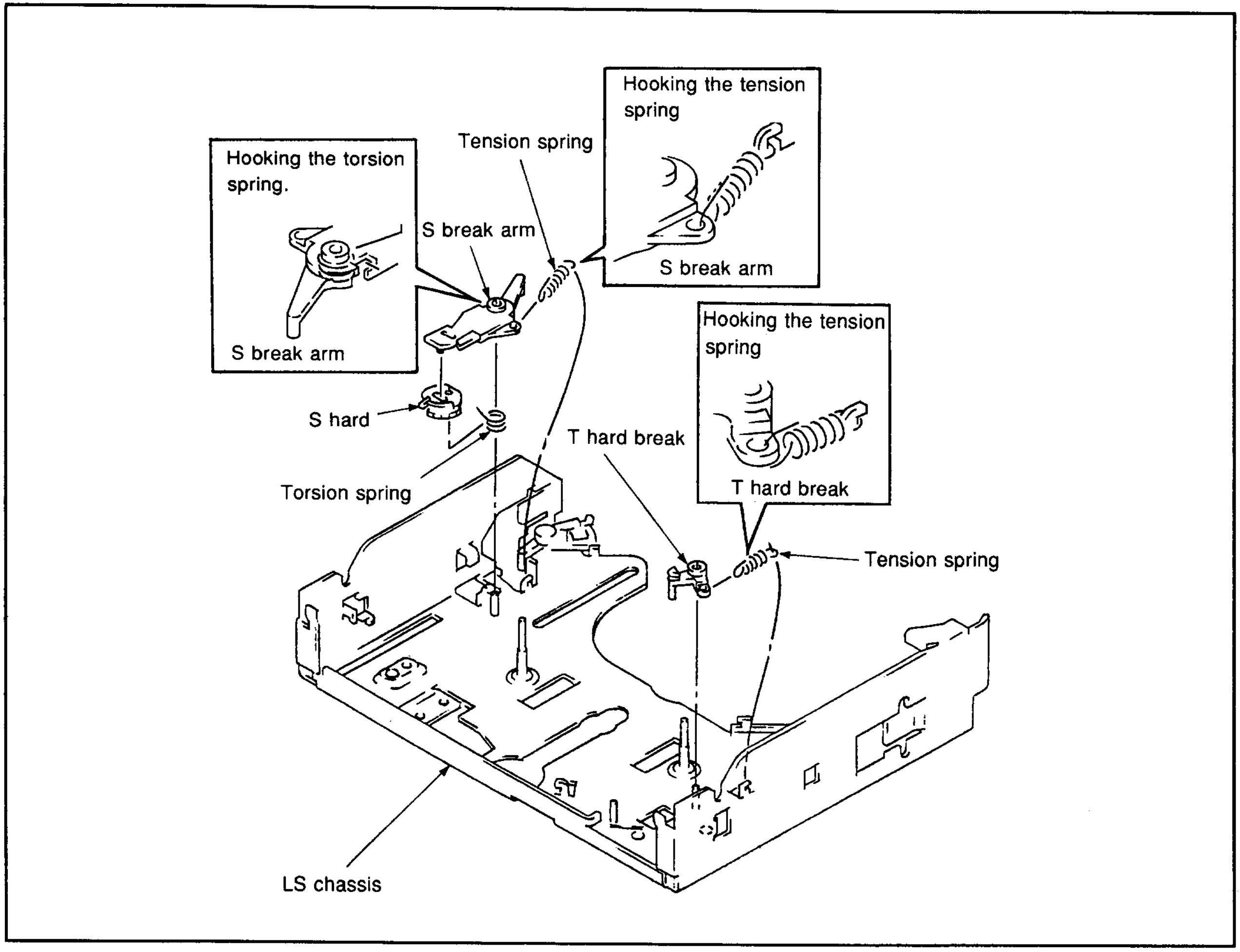
1) Refer to 1-1. to lift the cassette compartment assembly.
2) Refer to 3-10. to remove the LED base assembly.
3) Remove the tension spring from the side of LS chassis, then remove the T hard break, S break arm, torsion spring and S hard.

2. Attaching

1) Attach the S hard and torsion spring to the S break arm.

Note: Pay attention to attach the spring and S hard, and the hooking position of spring.

2) Hook each tension spring to the T hard break and S break arm, then attach each break to the LS chassis.
3) Hook the tension spring to the side of LS chassis.
4) Refer to 3-12. to attach the LED base assembly.
5) Refer to 1-1. to attach the cassette compartment assembly.


Hooking the tension spring
Hooking the torsion spring.
Tension spring
S break arm
S break arm
S break arm
Hooking the tension spring
S hard
T hard break
Torsion spring
T hard break
Tension spring
LS chassis

3-14. RVS BREAK AND LS CAM PLATE

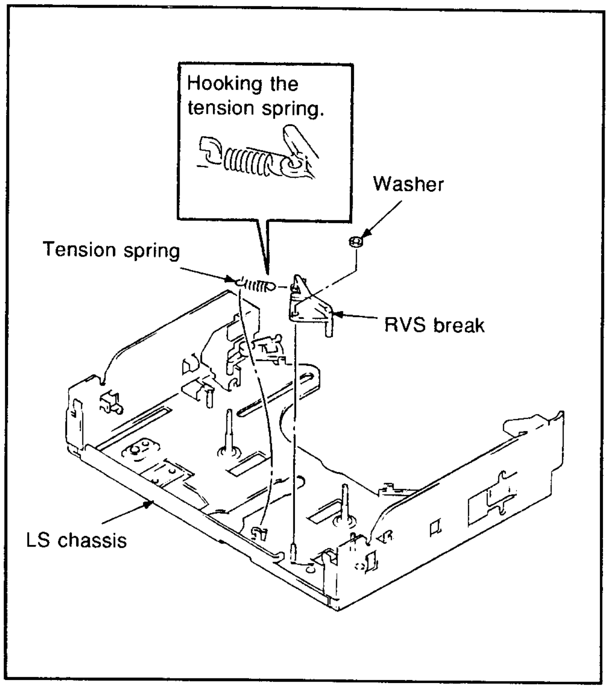
[RVS BREAK]

1. Removing

1) Refer to 1-1. to lift the cassette compartment assembly.
2) Refer to 3-10. to remove the LED base assembly.
3) After the washer is removed, remove the tension spring from the side of LS chassis, then remove the RVS break.

2. Attaching

1) Hook the tension spring to RVS break.
   (There is a specified spring hook direction.)
2) Attach the RVS break with a washer to the LS chassis and hook the tension spring.
3) Refer to 3-10. to attach the LED base assembly.
4) Refer to 1-1. to attach the cassette compartment assembly.


Hooking the tension spring.
Washer
Tension spring
RVS break
LS chassis

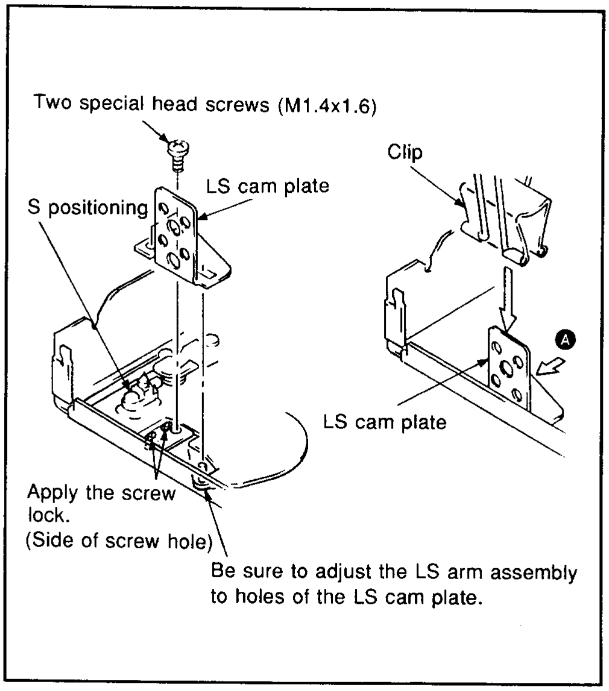
[LS CAM PLATE]

1. Removing

1) Refer to 1-1. to lift the cassette compartment assembly.
2) Refer to 3-10. to remove the LED base assembly.
3) Remove the two screws and remove the LS cam plate.

2. Attaching

1) Apply the lock screw (Ref No. J-20) (two positions), then fix the LS cam plate temporarily with two screws.
2) Set the $\boxed{\text{RP}}$ mode, loosen the two screws, press in the direction of arrow Ⓐ, clasp the LS cam plate and LS chassis with a clip etc., and fasten the screws tightly.
   Fixing torque: 0.0981 N • m (1 kg • cm)
3) Refer to 3-10. to attach the LED base assembly.
4) Refer to 1-1. to attach the cassette compartment assembly.


Two special head screws (M1.4x1.6)
Clip
LS cam plate
S positioning
Ⓐ
LS cam plate
Apply the screw lock.
(Side of screw hole)
Be sure to adjust the LS arm assembly to holes of the LS cam plate.

3-15. TG7 ARM BLOCK ASSEMBLY AND TENSION REGULATOR BAND ASSEMBLY

When the TG7 arm block assembly is replaced, be sure to replace the extension spring together.

1. Removing

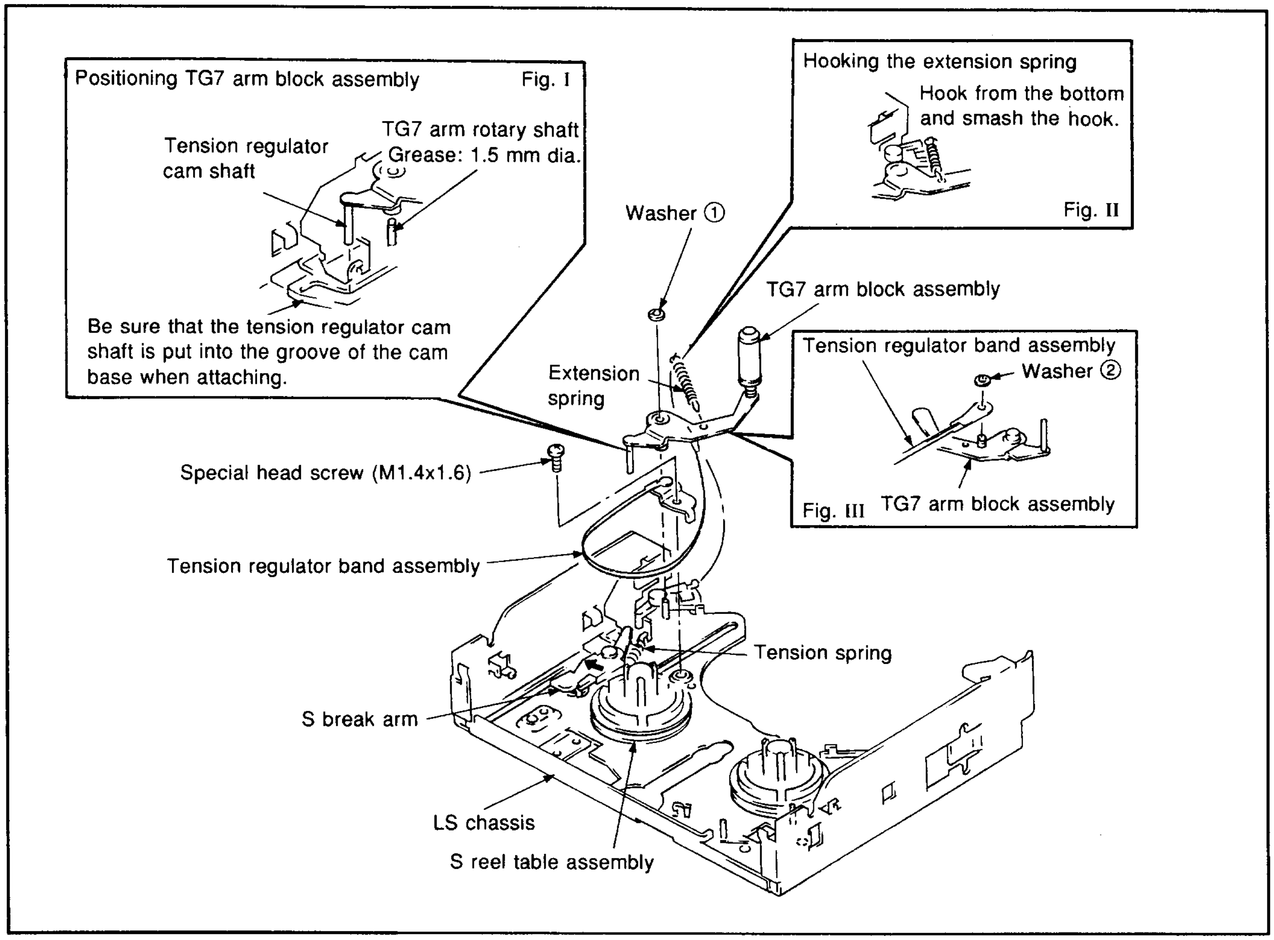
1) Refer to 1-1 to remove the cassette compartment assembly.
2) Refer to 3-10. to remove the LED base assembly.
3) Set the D. ON mode and check that the tension regulator band assembly is loose.
4) Remove the tension spring of S break arm (LS chassis side only), and keep away in the direction of arrow.
5) Remove the extension spring and a screw from the side of LS chassis, then remove the tension regulator band assembly.
6) Remove the washer ①, and remove the TG7 arm block assembly with the tension regulator band assembly together.
7) Remove the washer ②, and remove the tension regulator band assembly.
(Refer to the figure III.)

2. Attaching

1) Attach the tension regulator band assembly to the TG7 arm block assembly with the washer ②. And attach the extension spring to the arm block. (Refer to the figure II.)
Grease: Floil Grease (SG-941)

Note: There is a specified direction of the spring hook.

2) Set the D. ON mode, apply the grease (1.5 mm dia.) to the TG7 arm rotary shaft, then attach the TG7 arm block assembly to fit the groove of cam base and hook the extension spring. (Refer to the figure I.)
Grease: Floil Grease (SG-941)
3) Attach the washer ①.
4) Check the S break arm is slid in the direction of arrow, wind the tension regulator band to the S reel table assembly, then fix the tension regulator band assembly temporarily putting it to the side of S reel table assembly.
5) Hook the tension spring of S break arm to the LS chassis.
6) Refer to 3-10. to attach the LED base assembly.
7) Refer to 1-1. to attach the cassette compartment assembly.
8) Refer to 3-16. to adjust the position of FWD.
9) Refer to 3-17. to adjust the FWD back tension.
10) Refer to 3-18. to check the (RVS) torque on the reel table.


Positioning TG7 arm block assembly
Fig. I
TG7 arm rotary shaft
Grease: 1.5 mm dia.
Tension regulator cam shaft
Be sure that the tension regulator cam shaft is put into the groove of the cam base when attaching.
Hooking the extension spring
Hook from the bottom and smash the hook.
Fig. II
Washer ①
TG7 arm block assembly
Tension regulator band assembly
Washer ②
Fig. III
TG7 arm block assembly
Extension spring
Special head screw (M1.4x1.6)
Tension regulator band assembly
Tension spring
S break arm
LS chassis
S reel table assembly

3-16. FWD POSITION ADJUSTMENT

Adjust the following items for replacement of the TG7 arm, tension regulator band, S reel table and others or removing parts of these.

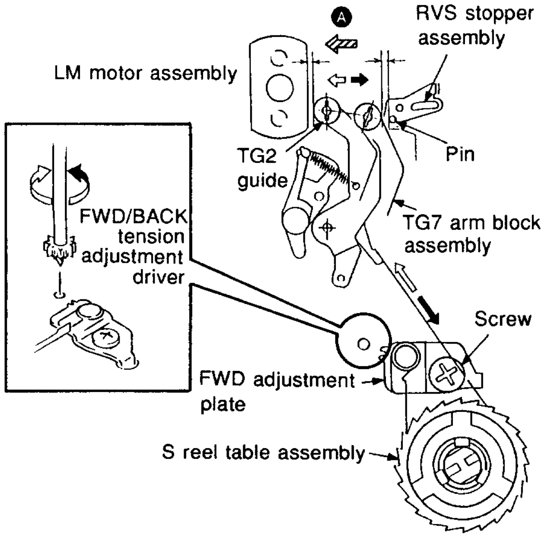
- FWD position adjustment
- FWD back tension adjustment (Refer to 3-17.)
- Reel table (RVS) torque check (Refer to 3-18.)

- **Adjusting**

1) Set the $\boxed{\text{R/P}}$ mode, and check the position of TG2 guide.
- Make sure the space between TG2 guide and LM motor assembly and the space between TG2 guide and RVS stopper assembly's pin are equal (not to be hit to the guide and TG7 arm.).
2) Loosen the screw and move the TG2 guide with your fingers. Adjust the FWD adjustment plate with a FWD/BACK tension adjustment driver (Ref No. J-21), then fasten the screw tightly.
   Fixing torque: 0.0588 N • m (0.6 kg • cm)

Note: Make sure there is enough space to move the TG2 in the direction of arrow Ⓐ.

- When the space on the LM motor assembly is small, turn the FWD/BACK tension adjustment driver in the direction of ➡.
- When the space on the RVS stopper assembly is small, turn the FWD/BACK tension adjustment driver in the direction of ⇨.


Ⓐ
RVS stopper assembly
LM motor assembly
TG2 guide
Pin
FWD/BACK tension adjustment driver
TG7 arm block assembly
Screw
FWD adjustment plate
S reel table assembly

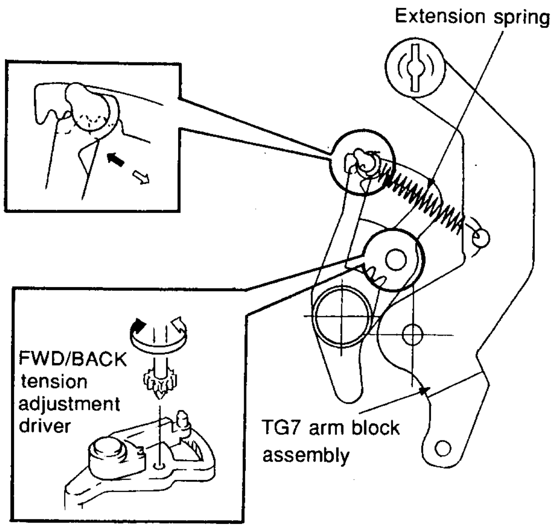
3-17. FWD BACK TENSION ADJUSTMENT

1. Adjusting

1) Set the FWD back tension cassette (Ref No. J-8).
2) Set the $\boxed{\text{REC}}$ mode, then check that the reading of S side is 0.417 to 0.490 mN • m (4.25 to 5 g • cm) and the change is lower than 0.0490 mN • m (0.5 g • cm). If the reading is not satisfied the specification, adjust the followings.

- If the reading is higher than the specification (weaken the tension of spring)
  Turn the adjusting screwdriver counterclockwise to satisfy the specification.
- If the reading is lower than the specification (strengthen the tension of spring)
  Turn the adjusting screwdriver clockwise to satisfy the specification.

Note: When the FWD/BACK tension adjustment driver is turned, take out the torque cassette once.


Extension spring
FWD/BACK tension adjustment driver
TG7 arm block assembly

- When the reading is more than the standard value, turn the FWD/BACK tension adjustment driver in the direction of ⇨.
- When the reading is less than the standard value, turn the FWD/BACK tension adjustment driver in the direction of ➡.

3-18. REEL TABLE TORQUE CHECK

- **Adjusting**

[FWD torque]

1) Set the FWD torque cassette (Ref No. J-7).
2) Set the FWD mode, then check that the torque value of the T reel table is 0.5393 to 1.258 mN • m (5.5 to 12.5 g • cm) at the center value of deflection and the change is 0.0981 mN • m (1.0 g • cm).

[RVS torque]

1) Set the RVS torque cassette (Ref No. J-6).
2) Set the RVS mode (by using EDIT SEARCH (–) button), then check that the torque value of the S reel table is 1.0787 to 1.9613 mN • m (11.0 to 20.0 g • cm) at the center value of deflection. **Note 1**

If the above values are not satisfied, check the position of FWD (tension regulator). Replace each reel table if there is no abnormal.

Note 1: Some speed of EDIT SEARCH is changed by double step due to strength of pressing. Select Normal speed (same as FWD) for the torque check.

3-19. T REEL TABLE ASSEMBLY

1. Removing

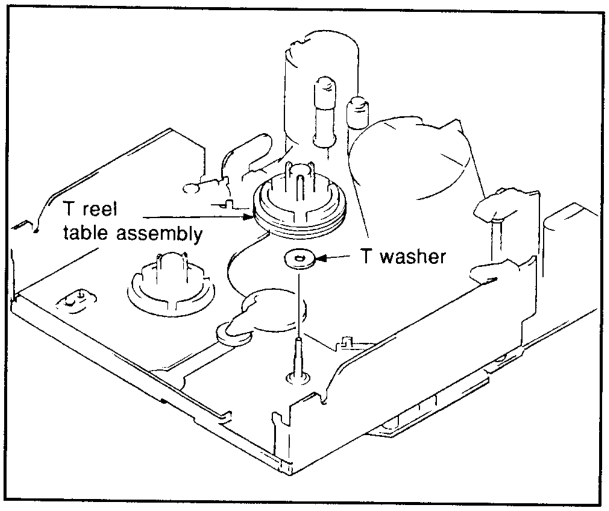
1) Refer to 1-1. to remove the cassette compartment assembly.
2) Refer to 3-10. to remove the LED base assembly.
3) Remove the T reel table assembly and T washer.

2. Attaching

1) Attach in the order of T washer and T reel table assembly.

Note: For attaching the T reel table assembly, perform "3-21. HEIGHT ADJUSTMENT FOR EACH REEL TABLE".

2) Refer to 3-10. to attach the LED base assembly.
3) Refer to 1-1. to attach the cassette compartment assembly.
4) Refer to 3-18. to check the torque of the reel table.



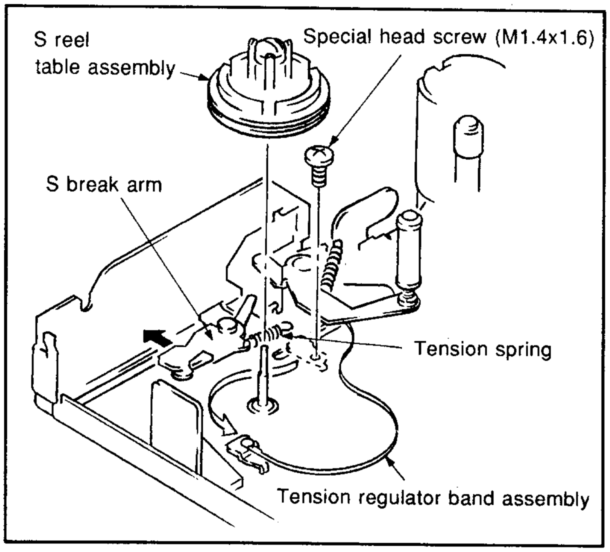
3-20. S REEL TABLE ASSEMBLY

1. Removing

1) Refer to 1-1. to remove the cassette compartment assembly.
2) Refer to 3-10. to remove the LED base assembly.
3) Remove the tension spring of the S break arm (LS chassis side only), and keep away in the direction of arrow.
4) Remove the screw and the tension regulator band assembly, then remove the S reel table assembly.

2. Attaching

1) Attach the S reel table assembly.
2) Set the [D. ON] mode, fix the tension regulator band assembly temporarily, and hook the tension spring. (There is a specified spring direction. (Refer to 3-13.))
3) Refer to 3-21. to adjust the height and tilt of each reel table.
4) Refer to 3-10. to attach the LED base assembly.
5) Refer to 1-1. to attach the cassette compartment assembly.
6) Refer to 3-16 to adjust the position of FWD.
7) Refer to 3-17. to adjust the FWD back tension.
8) Refer to 3-18. to check the reel's torque.


S reel table assembly
Special head screw (M1.4x1.6)
S break arm
Tension spring
Tension regulator band assembly

3-21. HEIGHT ADJUSTMENT FOR EACH REEL TABLE

Note: In either case one side of reel table adjustment is aimed, adjust both sides of reel table.

- **Adjusting**

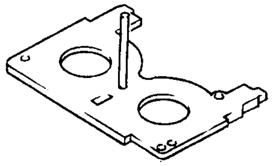
1) Refer to 1-1. to lift the cassette compartment assembly.
2) Set the [R/P] mode. Put the cassette standard plate (Ref No. J-9), turn the S reel table counterclockwise with a screwdriver (flat blade) to let down the reel table, and check that the cassette standard plate is not unstable. Be sure to remove the T reel table then.
3) Put the reel standard plate (Ref No. J-10) to adjust the S reel table with a screwdriver (flat blade), then adjust the height of the cassette standard plate and reel standard plate. (Height: ±0.1 mm, tilt: should be parallel)
4) Adjust the S reel table. Attach in the order of T reel table, cassette standard plate and reel standard plate to adjust the height and azimuth.
   (Height: ±0.1 mm, tilt: should be parallel)

- If not satisfied the specification, replace the T washer. (T reel side only)
  Yellow: 0.1 mm
  Green: 0.25 mm
  Black: 0.35 mm

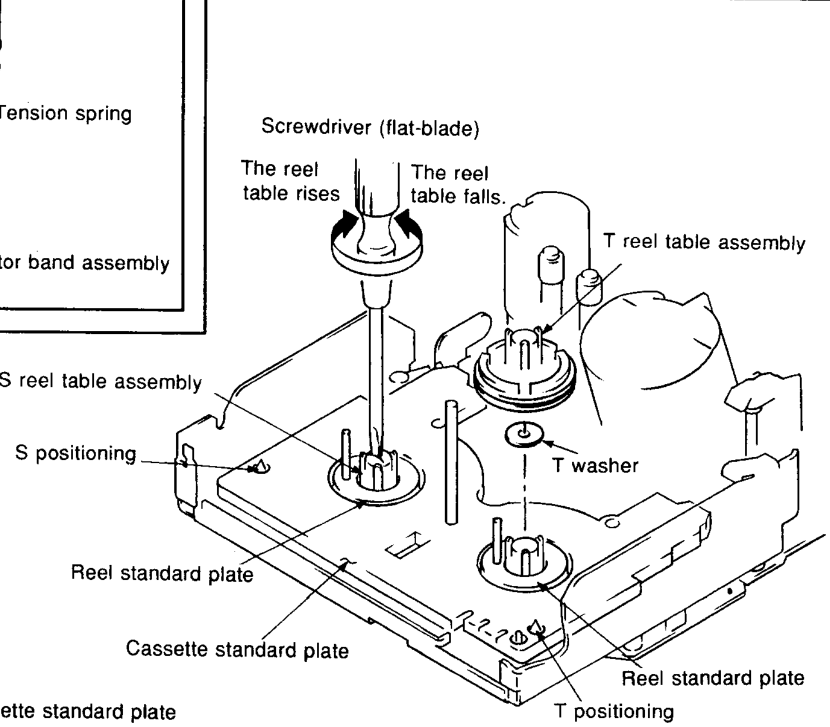
5) Refer to 3-10. to attach the LED base assembly.
6) Refer to 1-1. to attach the cassette compartment assembly.

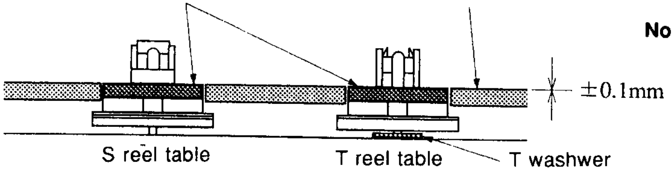
Used jigs

- Cassette standard plate (J-9)



- Reel standard plate (J-10)


Screwdriver (flat-blade)
The reel table rises
The reel table falls.
T reel table assembly
S reel table assembly
S positioning
T washer
Reel standard plate
Cassette standard plate
Reel standard plate
T positioning


Reel standard plate
Cassette standard plate
±0.1mm
S reel table
T reel table
T washwer

Note: When the T washer is replaced, remove the cassette standard plate each time for attachment.

3-22. LS CHASSIS BLOCK ASSEMBLY, GOOSENECK ASSEMBLY, RELAY GEAR, LOCK SLIDER, COMPULSION ARM ASSEMBLY, CAM SLIDER AND PINCH RELEASE ARM

1. Removing

1) Refer to 1-1. to remove the cassette compartment assembly.
2) Refer to 3-10. to remove the LED base assembly.
3) Remove the screw ① and remove the FPC holder.
4) Set the S. OFF mode.
5) Remove the washer to remove the gooseneck assembly and relay gear.
6) Remove the tension spring on the side of LS chassis and remove the lock slider in the direction of arrow.
7) Set the D. ON mode, remove the two of screw ②, then set the S. OFF mode.

Note: Do not remove the cam slider from the LS chassis except the replacement.

8) Remove the two of screw ③ and remove the LS chassis block assembly.

Note: When removing the LS chassis block assembly, remove it pressing the TG7 arm block assembly not to give a shock to the tension regulator band. (Remove it pressing the pinch arm as well.)

9) Remove the compulsion arm assembly and pinch release arm.

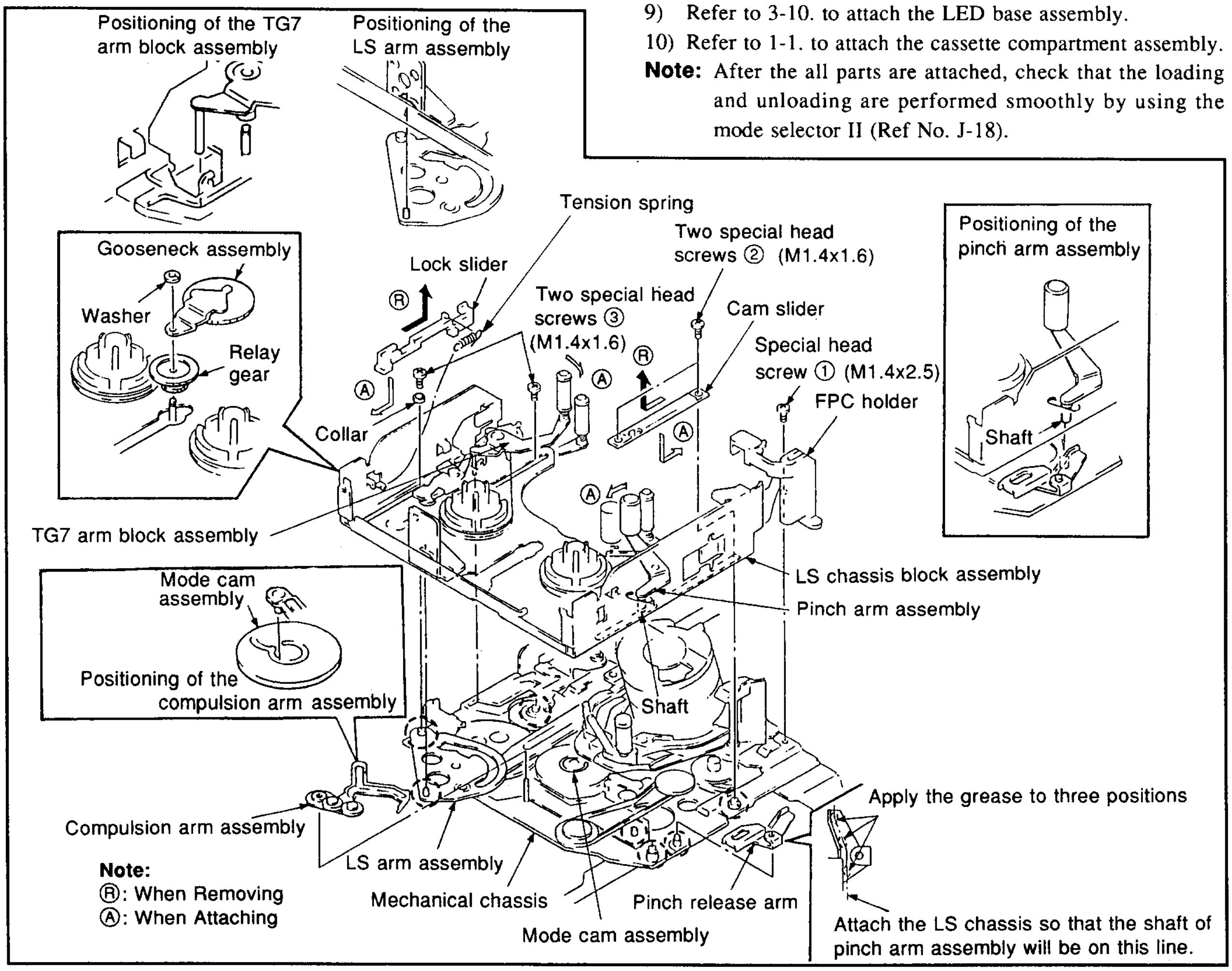
2. Attaching

1) Set the S. OFF mode.
2) Apply the grease (seven positions, 3 mm dia.) to the mechanical chassis and LS arm assembly.
   Grease: Floil Grease (SG-941)
3) Attach the compulsion arm assembly and pinch release arm.
4) Apply the grease (three positions, 3 mm dia.) to the pinch release arm, then put the LS chassis block assembly.

Note: Pay attention to adjust each position of the LS arm assembly, TG7 arm block assembly and pinch arm assembly.

5) Attach in the order of two of screw ③ (do not forget to put in the collar), lock slider and tension spring.
   Fixing torque: 0.0981 N • m (1 kg • cm)
6) Set the D. ON mode, attach the cam slider (pay attention to the direction for attaching) and two of screw ②.
   Fixing torque: 0.0981 N • m (1 kg • cm)
7) Attach the gooseneck assembly with a relay gear and a washer.
8) Attach the FPC holder with a screw ①.
   Fixing torque: 0.0588 N • m (0.6 kg • cm)
9) Refer to 3-10. to attach the LED base assembly.
10) Refer to 1-1. to attach the cassette compartment assembly.

Note: After the all parts are attached, check that the loading and unloading are performed smoothly by using the mode selector II (Ref No. J-18).


Positioning of the TG7 arm block assembly
Positioning of the LS arm assembly
Tension spring
Two special head screws ② (M1.4x1.6)
Positioning of the pinch arm assembly
Gooseneck assembly
Washer
Relay gear
Lock slider
Two special head screws ③ (M1.4x1.6)
Cam slider
Special head screw ① (M1.4x2.5)
FPC holder
Ⓡ
Ⓐ
Collar
Shaft
TG7 arm block assembly
LS chassis block assembly
Pinch arm assembly
Mode cam assembly
Positioning of the compulsion arm assembly
Shaft
Apply the grease to three positions
Compulsion arm assembly
LS arm assembly
Mechanical chassis
Pinch release arm
Mode cam assembly
Attach the LS chassis so that the shaft of pinch arm assembly will be on this line.

Note:
Ⓡ: When Removing
Ⓐ: When Attaching

3-23. GL (S) BLOCK ASEMBLY (COASTER (S) ASSEMBLY, GL (S) ASSEMBLY AND RAIL (S))

1. Removing

1) Refer to 1-1. to remove the cassette compartment assembly.
2) Refer to 3-10. to remove the LED base assembly.
3) Refer to 3-22. to remove the gooseneck assembly and LS chassis block assembly.
4) Refer to 3-1. to remove the drum assembly.
5) Set the STOP—RVS mode.
6) Remove the screw, pick up the ◌ part, slide the rail (S) in the direction of arrow Ⓐ, and set the D. ON mode.

Note: Check that the coaster (S) assembly is removed from the rail of mechanical chassis then.

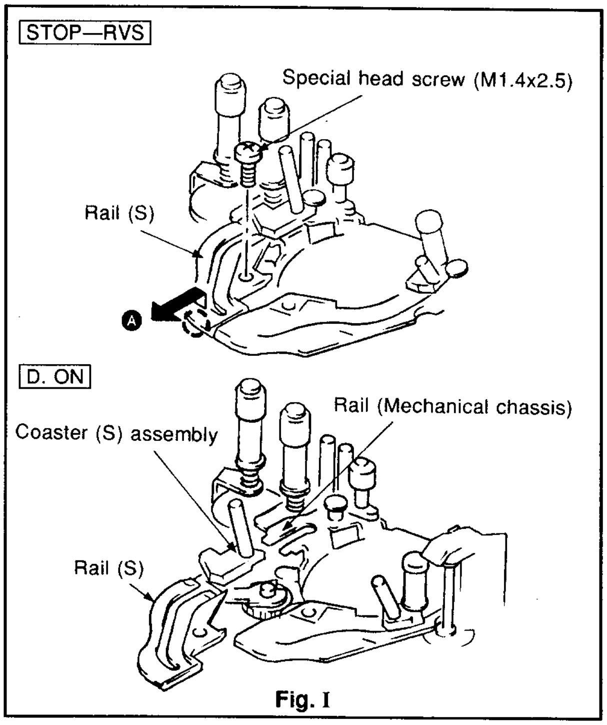

STOP—RVS
Special head screw (M1.4x2.5)
Rail (S)
Ⓐ
D. ON
Rail (Mechanical chassis)
Coaster (S) assembly
Rail (S)

Fig. I

7) Pick up and remove the GL (S) assembly.
8) Remove the washer and remove each parts.

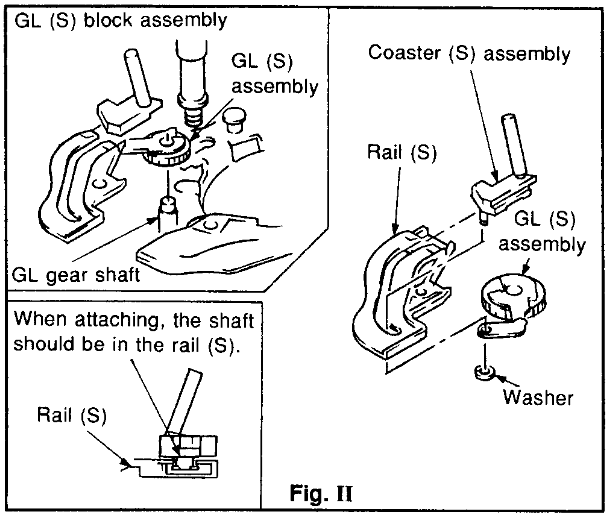

GL (S) block assembly
GL (S) assembly
GL gear shaft
When attaching, the shaft should be in the rail (S).
Rail (S)
Coaster (S) assembly
Rail (S)
GL (S) assembly
Washer

Fig. II

2. Attaching

1) Attach the coaster (S) assembly to the rail (S), then attach the GL (S) assembly. (Refer to the figure II)

Note: Pay attention to the direction of each parts' attachment.

2) Set the S. OFF mode.

Note: The S. OFF mode is the condition that all phase are matched as far as it is not abnormal. If there is a difference of phase, refer to "3-30. EACH GEAR AND MODE CAM ASSEMBLY PHASE ADJUSTMENT" to adjust the phase.

3) Apply the grease (1.5 mm dia.) to the GL gear shaft and attach the GL (S) assembly so that the each phase meets the LS arm assembly and GL (T) assembly.
   Grease: Floil Grease (SG-941)

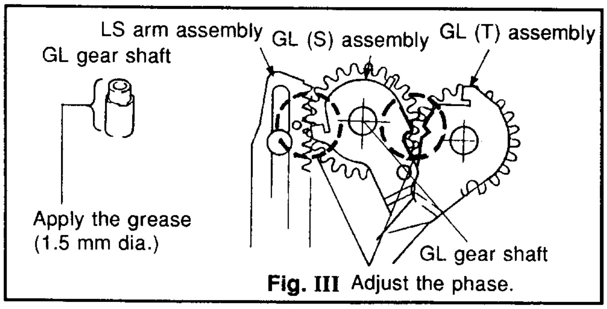

LS arm assembly
GL (S) assembly
GL (T) assembly
GL gear shaft
Apply the grease
(1.5 mm dia.)
GL gear shaft

Fig. III Adjust the phase.

4) Put the coaster (S) assembly to the rail of mechanical chassis by using the mode selector II (Ref No. J-18).

Note: Press the mode selector's button by instalments adjusting the direction of the coaster (S) assembly.
Mode display: S. OFF — STOP—RVS

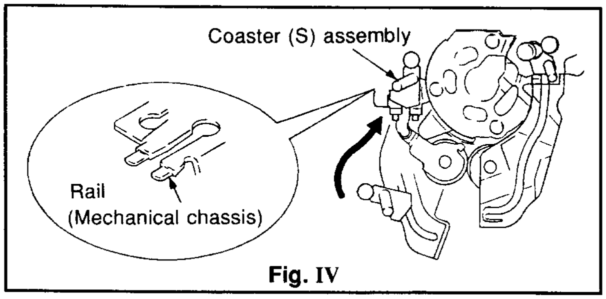

Coaster (S) assembly
Rail
(Mechanical chassis)

Fig. IV

5) Attach the rail (S) to the rail of mechanical chassis and GL gear shaft in order, and fasten the screw.
   Fixing torque: 0.00588 N • m (0.6 kg • cm)

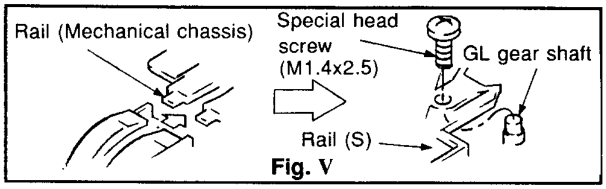

Rail (Mechanical chassis)
Special head screw (M1.4x2.5)
GL gear shaft
Rail (S)

Fig. V

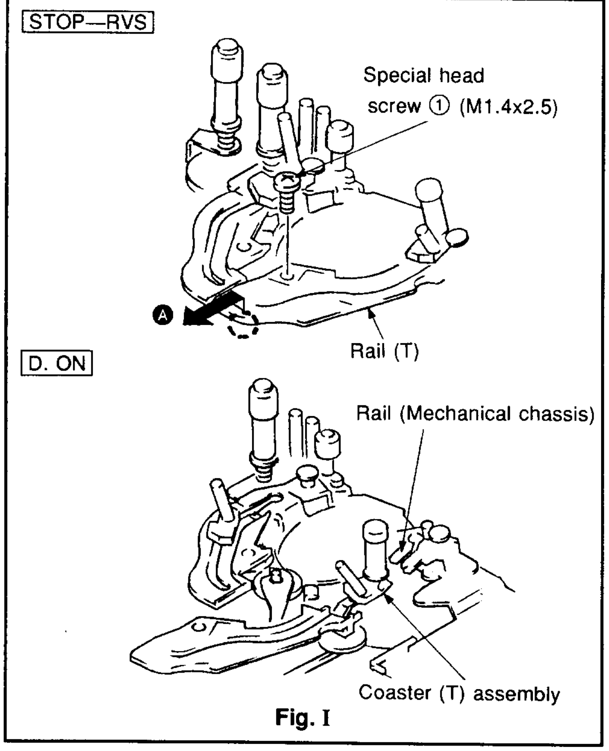
6) Refer to 3-1. to attach the drum assembly.
7) Refer to 3-22. to attach the gooseneck assembly and LS chassis block assembly.
8) Refer to 3-10. to attach the LED base assembly.
9) Refer to 1-1. to attach the cassette compartment assembly.

3-24. GL (T) BLOCK ASSEMBLY (COASTER (T) ASSEMBLY, GL (T) ASSEMBLY, RAIL (T) AND TG5 ASSEMBLY)

1. Removing

1) Refer to 1-1. to remove the cassette compartment assembly.
2) Refer to 3-10. to remove the LED base assembly.
3) Refer to 3-22. to remove the gooseneck assembly and LS chassis block assembly.
4) Refer to 3-9. to remove the capstan motor.
5) Refer to 3-1. to remove the drum assembly.
6) Set the STOP—RVS mode.
7) Remove the screw ①, pick up the ◌ part, remove the rail (T) in the direction of arrow Ⓐ, then set the D. ON mode.

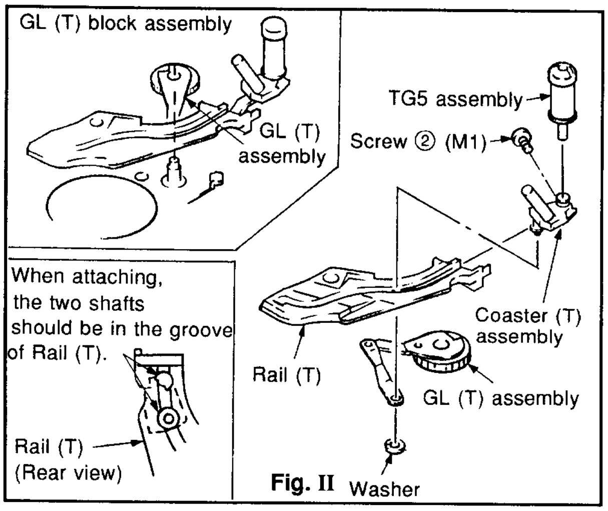
Note: Check that the coaster (T) assembly is removed from the rail of mechanical chassis then.



STOP—RVS
Special head screw ① (M1.4x2.5)
Ⓐ
Rail (T)
D. ON
Rail (Mechanical chassis)
Coaster (T) assembly

Fig. I

8) Pick up the GL (T) assembly with a pair of tweezers (a pincette) and remove.
9) Remove a washer and a screw ②, then remove each parts.



GL (T) block assembly
GL (T) assembly
TG5 assembly
Screw ② (M1)
When attaching, the two shafts should be in the groove of Rail (T).
Rail (T) (Rear view)
Rail (T)
Coaster (T) assembly
GL (T) assembly
Washer

Fig. II

2. Attaching

1) Fix temporarily the TG5 assembly with a screw ② to the coaster (T) assembly. (Refer to the figure II)
   Fixing torque: 0.0490 N • m (0.5 kg • cm)
2) Attach the coaster (T) assembly to the rail (T), then attach the GL (T) assembly. (Refer to the figure II)

Note: Pay attention to the direction of each parts' attachment.

3) Apply the grease (1.5 mm dia.) to the GL gear shaft and attach the GL (T) assembly so that the each phase meets the GL (S) assembly.

Note: After the attachment, set the S. OFF mode to check the phase.

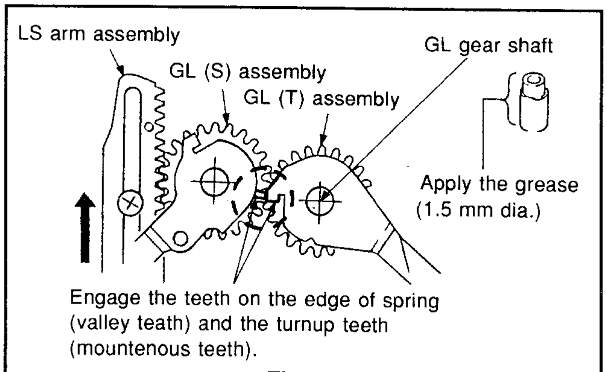

LS arm assembly
GL (S) assembly
GL (T) assembly
GL gear shaft
Apply the grease
(1.5 mm dia.)
Engage the teeth on the edge of spring
(valley teath) and the turnup teeth
(mountenous teeth).

Fig. III

4) Put the coaster (T) assembly into the rail of mechanical chassis by using the mode selector II (Ref No. J-18).

Note: Press the mode selector's button by instalments adjusting the direction of the coaster (T) assembly.
Mode display: S. OFF — STOP—RVS

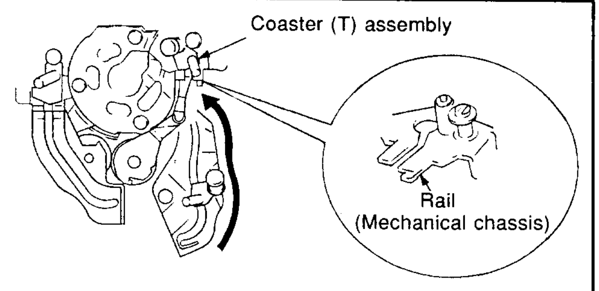

Coaster (T) assembly
Rail
(Mechanical chassis)

Fig. IV

5) Attach the rail (T) to the rail of mechanical chassis and GL gear shaft with a screw ① in order.
   Fixing torque: 0.0588 N • m (0.6 kg • cm)

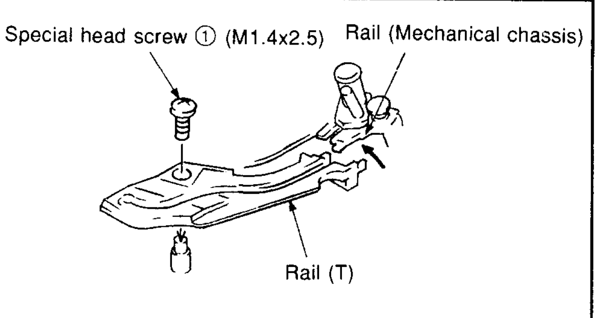

Special head screw ① (M1.4x2.5)
Rail (Mechanical chassis)
Rail (T)

Fig. V

6) Attach the TG5 preset base (Ref No. J-13) and adjust the azimuth and height of the TG5 guide.
   - Azimuth adjustment
     Turn the gate adjustment screw and adjust parallel to jigs.
   - Height adjustment
     Turn the TG5 assembly so that the space between the jig and the TG5 (upper) flange is equal to the space between the jig and the TG5 (lower) flange. (A=B)
7) Rotate the adjustment screw in a 60-degree arc counterclockwise.

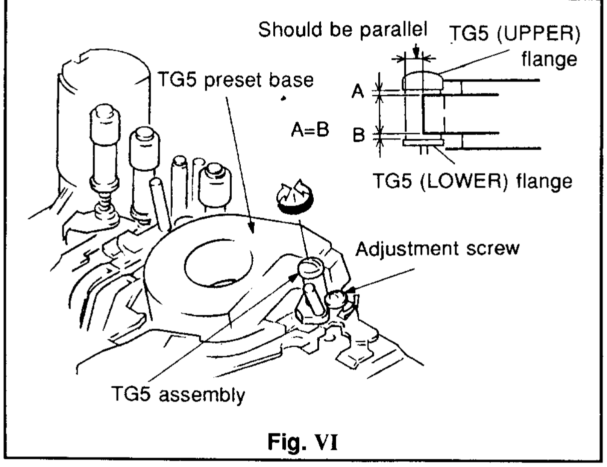

Should be parallel
TG5 (UPPER) flange
TG5 preset base
A
A=B
B
TG5 (LOWER) flange
Adjustment screw
TG5 assembly

Fig. VI

8) Refer to 4-2. to adjust the tracking.
9) Refer to 3-1. to attach the drum assembly.
10) Refer to 3-9. to attach the capstan motor.
11) Refer to 3-22. to attach the gooseneck assembly and LS chassis block assembly.
12) Refer to 3-10. to attach the LED base assembly.
13) Refer to 1-1. to attach the cassette compartment assembly.

3-25. MODE CAM ASSEMBLY AND FP-245 FLEXIBLE BOARD

1. Removing

1) Refer to 1-1 to remove the cassette compartment assembly.
2) Refer to 3-10. to remove the LED base assembly.
3) Refer to 3-22. to remove the gooseneck assembly, LS chassis block assembly and reform arm assembly.
4) Set the STOP—RVS mode.
5) Remove the screw ① and keep away from the rail (S).
6) Remove a screw ② and two of screw ③, then remove the mode cam assembly and FP-245 flexible board.

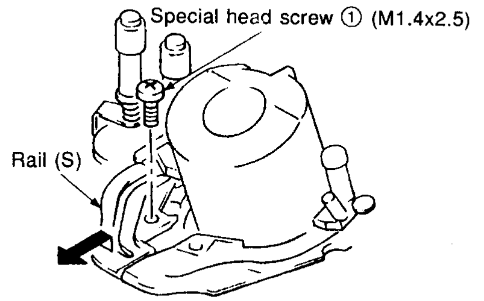
Note: Pay attention the FP-245 flexible board is connected to the mode selector II change connector board (Ref No. J-19).

2. Attaching

1) Attach the FP-245 flexible board with two of screw ③ and apply the contact grease to a pattern.
   Fixing torque: 0.0981 N•m (1 kg•cm)
   Thickness application of grease: 0.2 to 0.3 mm (A little overflow is no problem.)
2) Put the mode cam assembly on the fitting shaft. (Do not fasten with a screw.)
3) Attach the rail (S) with a screw ① and load by using the mode selector II as in the figure I. (Condition: the phase of each gear is matched. S. OFF mode.)
   Fixing torque: 0.0588 N•m (0.6 kg•cm)
4) Pay attention to the phase with the cam (S) assembly. Fix the mode cam assembly with a screw ②.
   Fixing torque: 0.0588 N•m (0.6 kg•cm)

Note: Connect the FP-245 flexible board and mode selector II change connector board.

5) Refer to 3-22. to attach the compulsion arm assembly, LS chassis block assembly and gooseneck assembly.
6) Refer to 3-10. to attach the LED base assembly.
7) Refer to 1-1. to attach the cassette compartment assembly.


Special head screw ① (M1.4x2.5)
Rail (S)

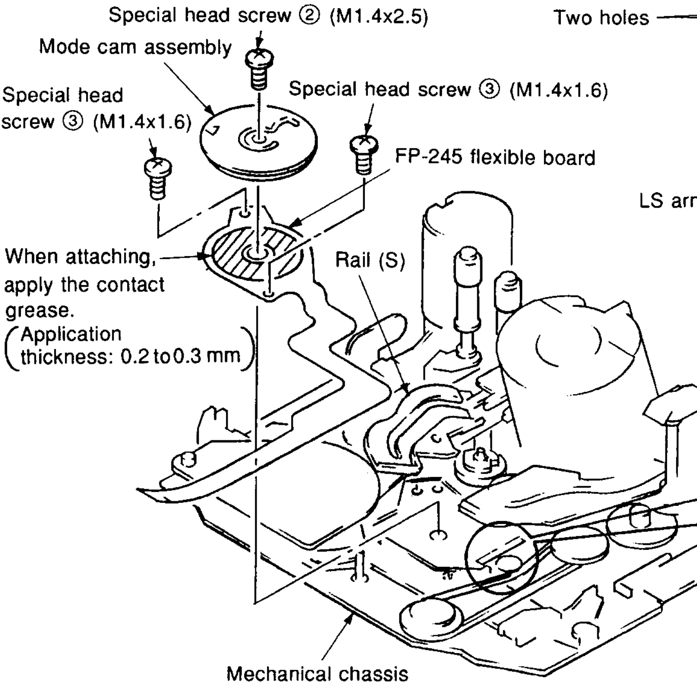
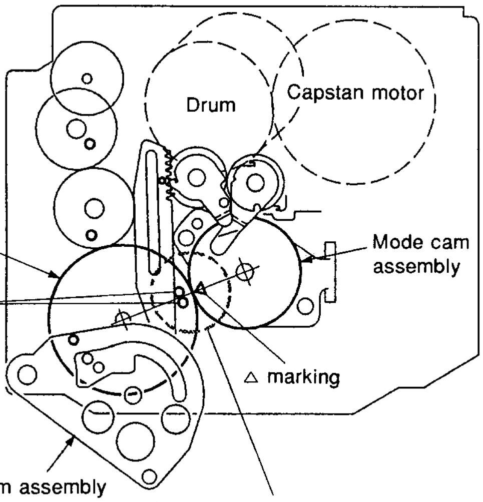
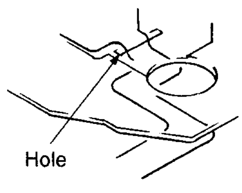

Special head screw ② (M1.4x2.5)
Mode cam assembly
Special head screw ③ (M1.4x1.6)
Special head screw ③ (M1.4x1.6)
FP-245 flexible board
When attaching, apply the contact grease.
(Application thickness: 0.2 to 0.3 mm)
Rail (S)
Mechanical chassis

Fig. I


Drum
Capstan motor
Cam (S) assembly
Mode cam assembly
Two holes
△ marking
LS arm assembly

When attaching, adjust the phase of each gear as in the figure and fasten the mode cam assembly with screws.

When attaching, pass the FP-245 flexible board through the hole of mechanical chassis.



3-26. LS ARM ASSEMBLY, EJ ARM AND CAM (S) ASSEMBLY

1. Removing

1) Refer to 1-1. to remove the cassette compartment assembly.
2) Refer to 3-1. to remove the drum assembly.
3) Refer to 3-10. to remove the LED base assembly.
4) Refer to 3-22 to remove the gooseneck assembly and LS chassis block assembly.
5) Refer to 3-23. to remove the GL (S) block assembly.
6) Set the S. OFF mode, remove the screw ①, then remove the LS arm assembly.
7) Remove in the order of tension spring and screw ② from the side of LS chassis, then remove the EJ arm and cam (S) assembly.

2. Attaching

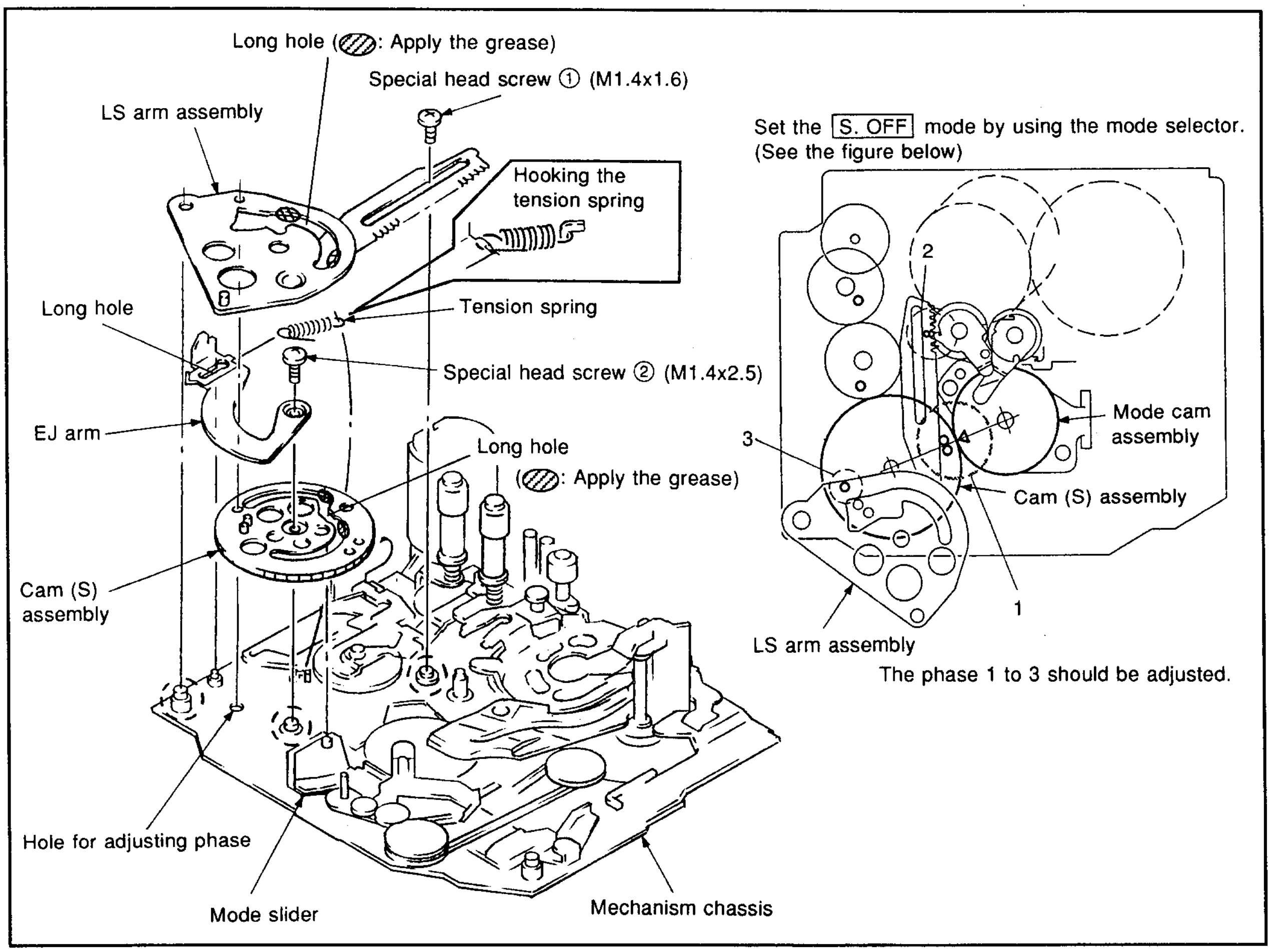
1) Check the S. OFF mode and apply the grease (three positions, 1.5 mm dia.) to the mechanical chassis.
   Grease: Floil Grease (SG-941)

Note: S. OFF mode is the condition that the phase of each gear is matched.

2) Apply the grease (◌: two positions, 1.5 mm dia.) into a long hole of the cam (S) assembly, attach it with attention to the phase.
   Grease: Floil Grease (SG-941)
3) Apply the grease (1.5 mm dia.) into a long hole of the EJ arm. Attach it with a screw ② and hook the tension spring.
   Fixing torque: 0.0981 N•m (1 kg•cm)

Note: There is a specified direction of the spring hook.

4) Apply the grease (two positions, 1.5 mm dia.) into a long hole of the LS arm assembly. Pay attention to the phase with the cam (S) assembly and mode slider, and attach with a screw ①.
   Fixing torque: 0.0981 N•m (1 kg•cm)
5) Refer to 3-23 to attach the GL (S) block assembly.
6) Refer to 3-22. to attach the LS chassis block assembly and gooseneck assembly.
7) Refer to 3-10. to attach the LED base assembly.
8) Refer to 3-1. to attach the drum assembly.
9) Refer to 1-1. to attach the cassette compartment assembly.


Long hole (▨: Apply the grease)
Special head screw ① (M1.4x1.6)
LS arm assembly
Hooking the tension spring
Long hole
Tension spring
Special head screw ② (M1.4x2.5)
EJ arm
Long hole
(▨: Apply the grease)
Cam (S) assembly
Hole for adjusting phase
Mode slider
Mechanism chassis
2
3
1
Mode cam assembly
Cam (S) assembly
LS arm assembly

Set the S. OFF mode by using the mode selector. (See the figure below)

The phase 1 to 3 should be adjusted.

3-27. ADJUSTMENT ARM ASSEMBLY, RELAY BELT, RELAY PULLEY ASSEMBLY AND CONVERSION PULLEY ASSEMBLY

1. Removing

1) Refer to 1-1. to remove the cassette compartment assembly.
2) Refer to 3-10. to remove the LED base assembly.
3) Refer to 3-22. to remove the gooseneck assembly, LS chassis block assembly and reform arm assembly.
4) Remove in the order of tension spring and a screw from the side of mechanical chassis, then remove the adjustment arm assembly.

Note: Remove the spring from the rear of mechanical chassis.

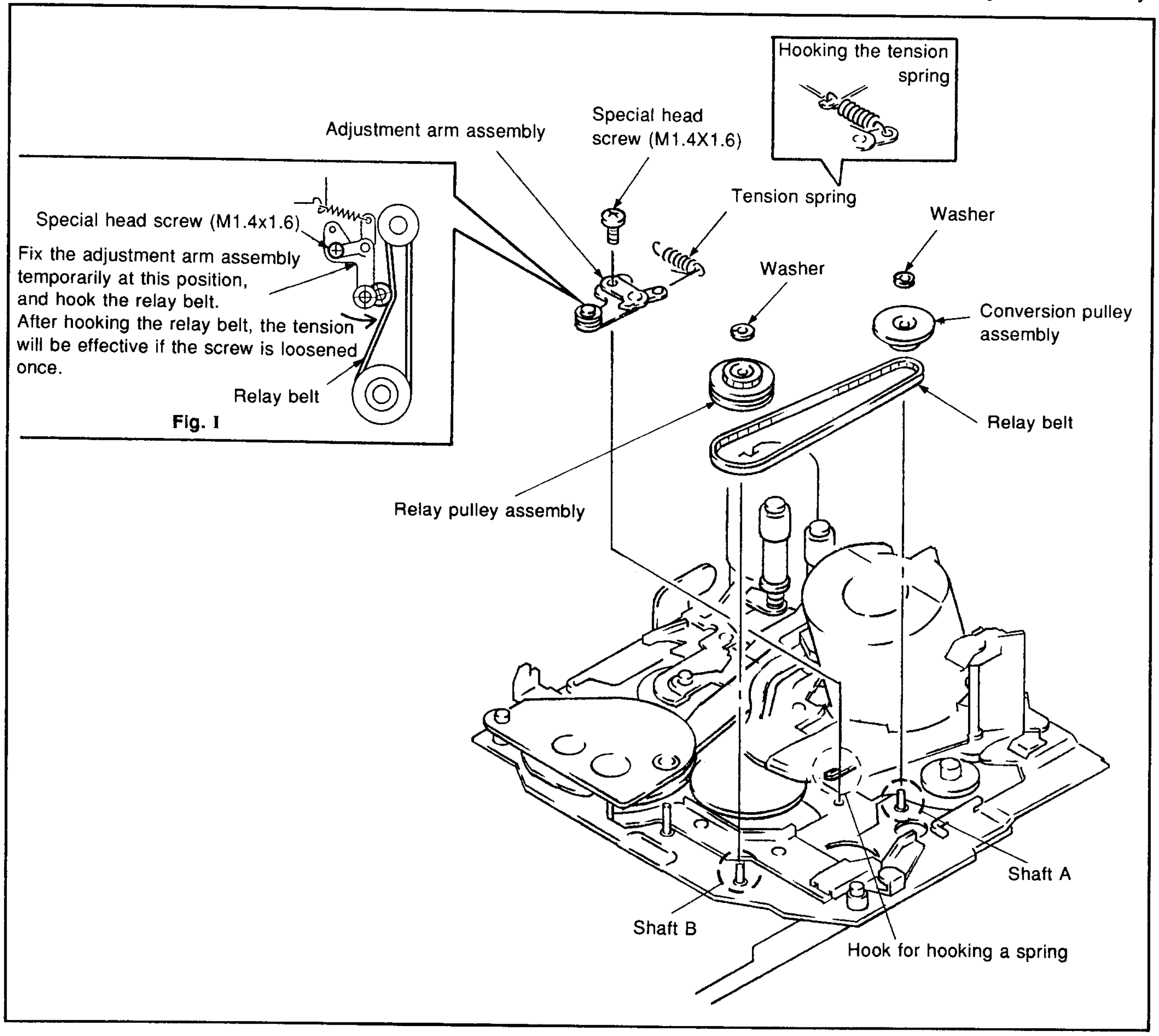
5) Remove the relay belt and washers, then remove the relay pulley assembly and conversion pulley assembly.

2. Attaching

1) Hook the tension spring to the side of LS chassis, then fix temporarily the adjustment arm assembly at the position in the figure I.

Note: There is a specified direction of the spring hook.

2) Apply one quarter drop oil to the shaft A and B each. (◌ part)
   Oil: NT68
3) Attach the relay pulley assembly and conversion pulley assembly with each washer, then hook the relay belt. (Pay attention to a torsion in a belt).
4) Loosen the screw, check a tension to the relay belt, and fasten the screw tightly. (Refer to the figure I.)
   Fixing torque: 0.0981 N • m (1 kg • cm)
5) Refer to 3-22. to attach the compulsion arm assembly, LS chassis block assembly and gooseneck assembly.
6) Refer to 3-10. to attach the LED base assembly.
7) Refer to 1-1. to attach the cassette compartment assembly.


Hooking the tension spring
Adjustment arm assembly
Special head screw (M1.4X1.6)
Tension spring
Washer
Washer
Conversion pulley assembly
Relay belt
Relay pulley assembly
Special head screw (M1.4x1.6)
Relay belt
Shaft A
Shaft B
Hook for hooking a spring

Fix the adjustment arm assembly temporarily at this position, and hook the relay belt.
After hooking the relay belt, the tension will be effective if the screw is loosened once.

Fig. I

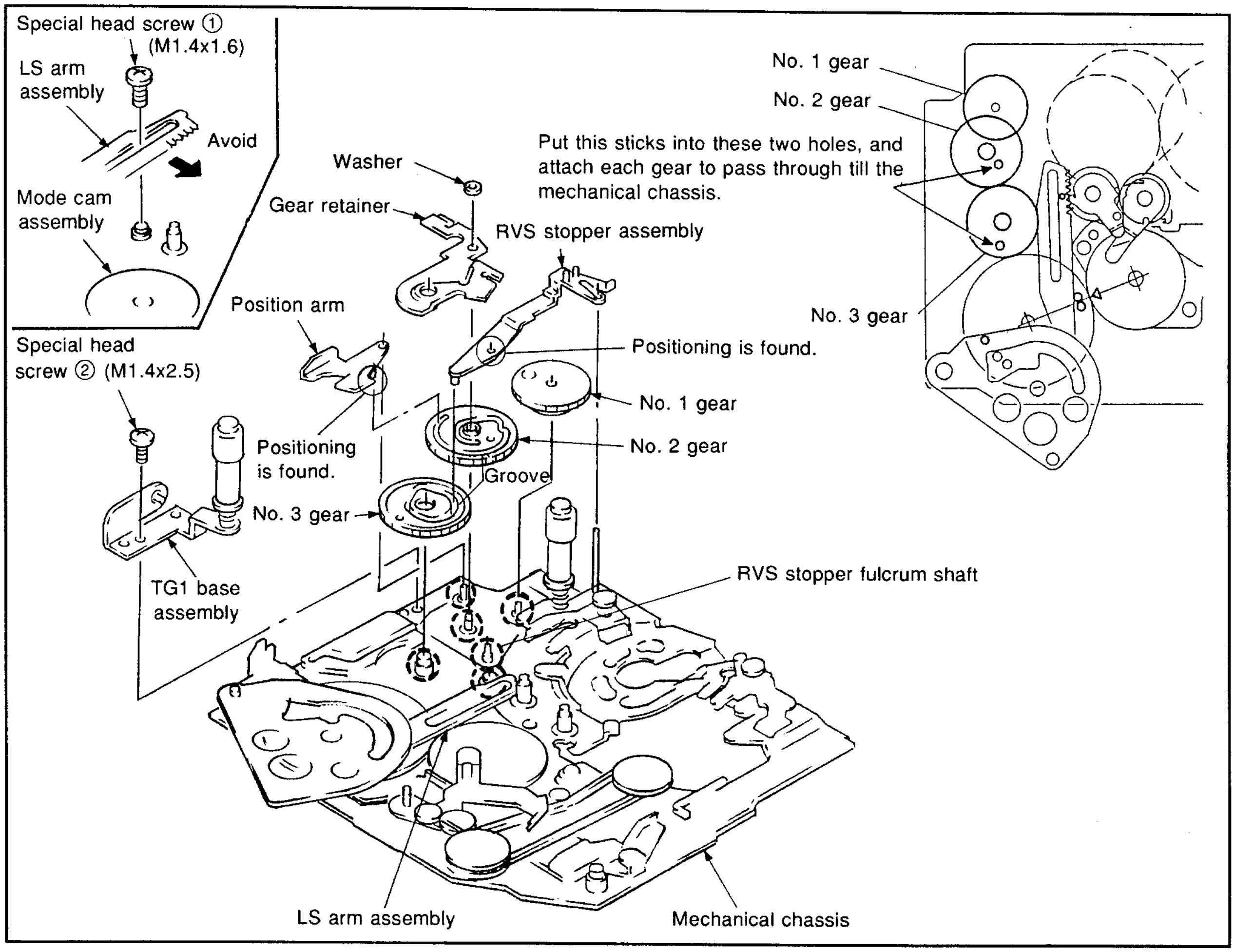
3-28. GEAR RETAINER, POSITION ARM, RVS STOPPER ASSEMBLY AND GEAR NO.1, 2 AND 3

1. Removing

1) Refer to 1-1. to remove the cassette compartment assembly.
2) Refer to 3-1. to remove the drum assembly.
3) Refer to 3-2. to remove the HC assembly.
4) Refer to 3-10. to remove the LED base assembly.
5) Refer to 3-22. to remove the gooseneck assembly and LS chassis block assembly.
6) Refer to 3-23. to remove the GL (S) block assembly.
7) Refer to 3-8. to remove the LM motor.
8) Remove the screw ① and keep away from the LS arm assembly.
9) Remove the washer and remove the gear retainer, position arm and RVS stopper assembly.
10) Remove the screw ② and remove the TG1 base assembly.
11) Remove each gear of No. 1, 2, and 3.

2. Attaching (Refer to "3-30. EACH GEAR PHASE ADJUSTMENT" for detail.)

1) Apply the grease (1.5 mm dia.) to six positions of ◌ part and each gear of No. 1, 2 and 3.
2) Attach in the order of No. 3, 2 and 1 with attention to the phase. (As for gear of No. 1, phase adjusting is not needed.)
3) Attach the TG1 base assembly with a screw ②.
4) Apply the grease to the groove of gears No. 2 and 3.
   Grease: Floil Grease (SG-941)
5) Attach in the order of RVS stopper assembly (The position adjustment is needed. RVS stopper fulcrum shaft), position arm (Adjust the pin and the groove of No. 2 gear.) and gear retainer with a washer.
6) Attach the LS arm assembly with a screw ①.
   Fixing torque: 0.0981 N • m (1 kg • cm)
7) Refer to 3-8. to attach the LM motor assembly.
8) Refer to 3-23. to attach the GL (S) block assembly.
9) Refer to 3-22. to attach the LS chassis block assembly and gooseneck assembly.
10) Refer to 3-10. to attach the LED base assembly.
11) Refer to 3-2. to attach the HC assembly.
12) Refer to 1-1. to attach the cassette compartment assembly.


Special head screw ①
(M1.4x1.6)
LS arm assembly
Avoid
Mode cam assembly
Special head screw ② (M1.4x2.5)
Washer
Gear retainer
RVS stopper assembly
Position arm
Positioning is found.
Positioning is found.
No. 1 gear
No. 2 gear
Groove
No. 3 gear
TG1 base assembly
Put this sticks into these two holes, and attach each gear to pass through till the mechanical chassis.
No. 1 gear
No. 2 gear
No. 3 gear
RVS stopper fulcrum shaft
LS arm assembly
Mechanical chassis

3-29. MODE SLIDER

1. Removing

1) Refer to 1-1. to remove the cassette compartment assembly.
2) Refer to 3-1. to remove the drum assembly.
3) Refer to 3-10. to remove the LED base assembly.
4) Refer to 3-22. to remove the gooseneck assembly, LS chassis block assembly, compulsion arm assembly and pinch release arm.
5) Refer to 3-23. and 3-24. to remove the each GL (S) and (T) block assembly.
6) Refer to 3-25. to remove the LS arm assembly, EJ arm and cam (S) assembly.
7) Loosen a screw, slide the adjustment arm assembly in the direction of arrow (fixed at the position in the figure I) Ⓐ, and remove the relay belt.
8) Remove the mode slider in the direction of arrow. (Pay attention to lose a of LS roller.)

2. Attaching

1) Apply the grease (1.5 mm dia.) to the shaft A and attach the mode slider in the direction of arrow.
   Grease: Floil Grease (SG-941)
2) Apply the grease (1.5 mm dia.) to each shaft B and C, and attach the LS roller to the shaft B.
   Grease: Floil Grease (SG-941)
3) After the relay belt is attached, loosen the screw, check a tension to the relay belt, and fasten the screw tightly. (Refer to the figure I.)
   Fixing torque: 0.0981 N • m (1 kg • cm)
4) Adjust the phase of each gear of No. 2 and 3 and the mode cam assembly by using the mode selector II. (Refer to 3-30.)

Note: The mode cam assembly should be manual operated.

5) Refer to 3-26. to attach the cam (S) assembly, EJ arm and LS arm assembly.
6) Refer to 3-23. and 3-24. to attach the GL (S) and (T) block assembly.
7) Refer to 3-22. to attach the release arm, compulsion arm assembly, LS chassis block assembly and gooseneck assembly.
8) Refer to 3-10. to attach the LED base assembly.
9) Refer to 3-1. to attach the drum assembly.
10) Refer to 1-1. to attach the cassette compartment assembly.

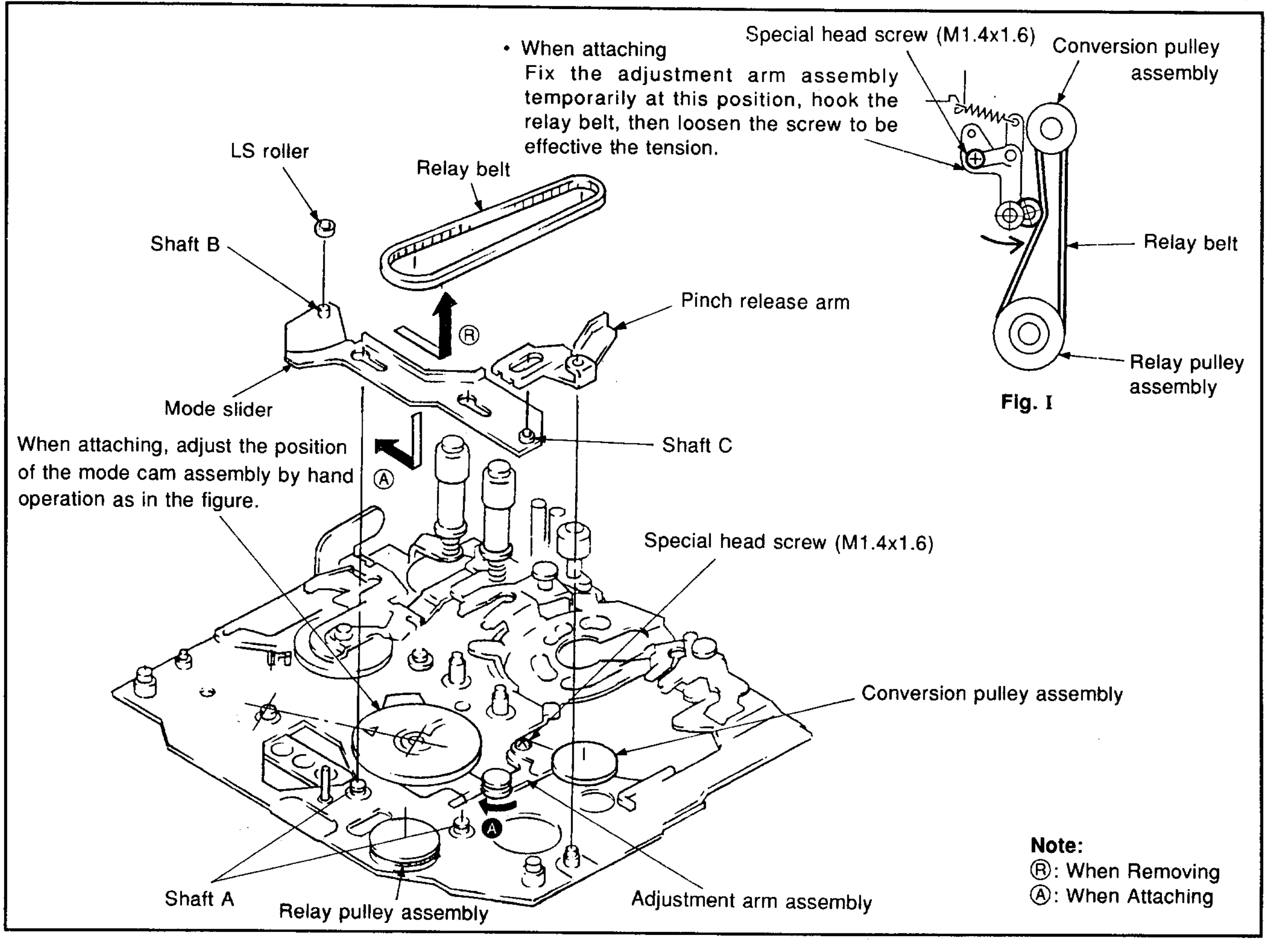

• When attaching
Fix the adjustment arm assembly temporarily at this position, hook the relay belt, then loosen the screw to be effective the tension.
Special head screw (M1.4x1.6)
Conversion pulley assembly
Relay belt
Relay pulley assembly
LS roller
Relay belt
Shaft B
Pinch release arm
Ⓡ
Mode slider
When attaching, adjust the position of the mode cam assembly by hand operation as in the figure.
Ⓐ
Shaft C
Special head screw (M1.4x1.6)
Conversion pulley assembly
Ⓐ
Shaft A
Relay pulley assembly
Adjustment arm assembly

Fig. I

Note:
Ⓡ: When Removing
Ⓐ: When Attaching

3-30. EACH GEAR AND MODE CAM ASSEMBLY PHASE ADJUSTMENT

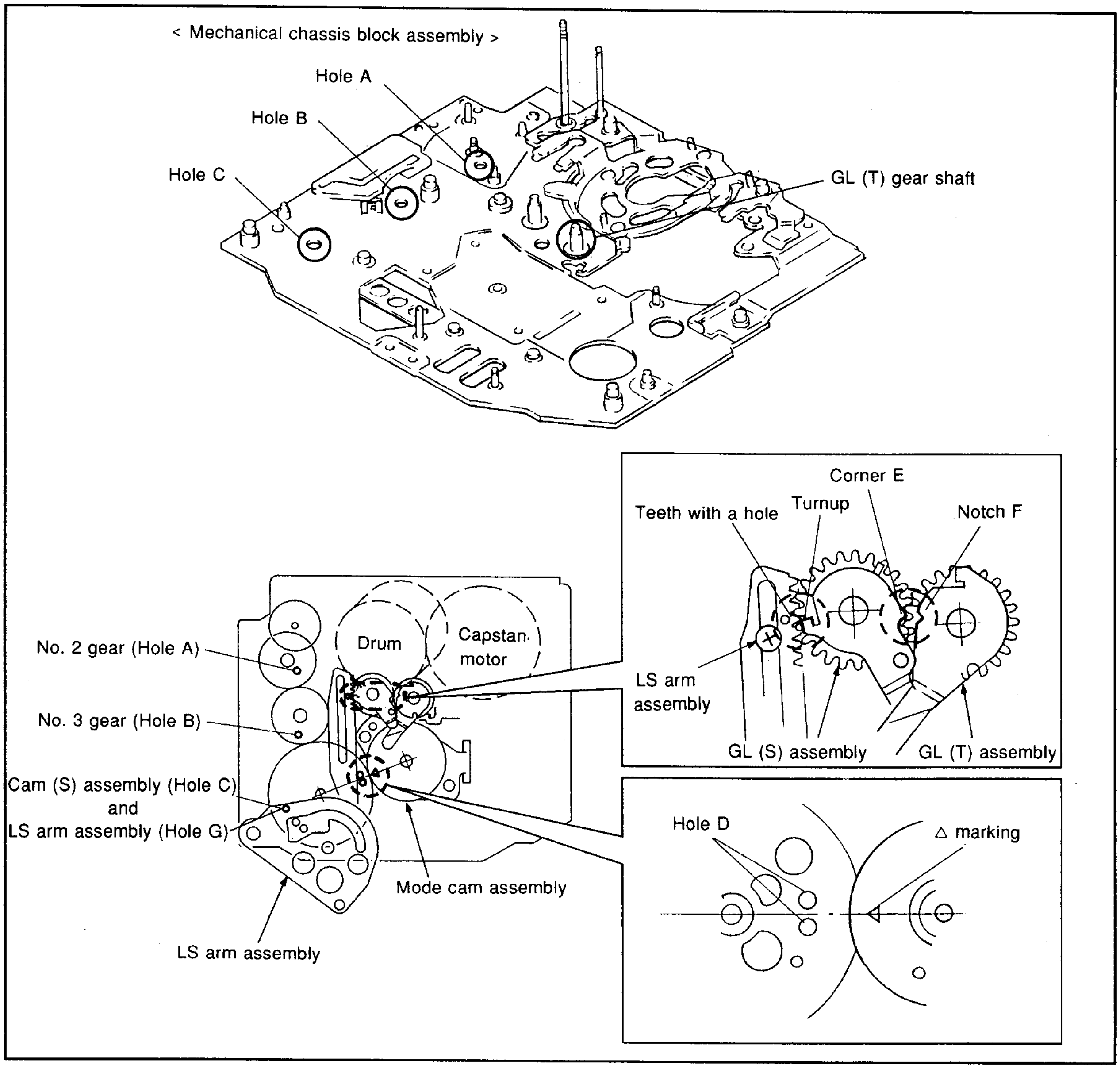
In case the phase of mode cam assembly and its related gears does not match, so that the normal operation is not performed due to replacement or removal of parts needed to adjust the phase, adjust the phase of each parts as below.

- **Phase adjusting**

1) Set each hole A of gear No. 2, B of gear No. 3 and C of cam (S) assembly to the holes A, B and C on the mechanical chassis in layers.
2) Set the position of the △ mark on the mode cam assembly between two of holes D on the cam (S) assembly.
3) Attach the GL (T) assembly to the GL (T) gear shaft.
4) Set the position of the notch F and the corner E on the GL (S) assembly to the GL (T) assembly.
5) Set the hole G on the LS arm assembly to the hole C on the cam (S) assembly in layers. Also set the position of the teeth with a hole of the LS arm assembly and the turn-up of the GL (S) assembly at the same time.
6) After adjusting all phase, check the S. OFF mode by using the mode selector II (Ref No. J-18).

Note 1: The S. OFF mode is the condition that all phase are matched.

Note 2: As for attaching each gear and mode cam assembly, refer to attaching for each.


< Mechanical chassis block assembly >
Hole A
Hole B
Hole C
GL (T) gear shaft
Corner E
Teeth with a hole
Turnup
Notch F
LS arm assembly
GL (S) assembly
GL (T) assembly
Drum
Capstan motor
No. 2 gear (Hole A)
No. 3 gear (Hole B)
Cam (S) assembly (Hole C) and LS arm assembly (Hole G)
Mode cam assembly
LS arm assembly
Hole D
△ marking

4. TAPE PATH ADJUSTMENT

4-1. PREPARATION FOR ADJUSTMENT

1) Refer to 2-2. to clean the tape running surface (tape guide, drum, capstan and pinch roller).
2) Connect the adjustment remote commander (Ref No. J-17) to the remote terminal of the set and turn the HOLD switch on.
3) Select the data of page: 3 and address: 3C , then set data: 07. (Note 1)
4) Connect the oscilloscope (Note 2). (Note 1)
   Channel 1—RS-63/64 board CN775 ① pin (Note 3)
   External trigger—RS-63/64 board CN775 ⑥ pin
   Trigger scope— +

Note 1: Refer to each service manual due to difference between each model. The case of DCR-VX700/VX1000 series is mentioned here.

Note 2: Connect the oscilloscope through the multi CP jig 2 (J-6082-140-A) or CPC jig (J-6082-311-A).

Note 3: Connect CN775 ① and ② pin (GND) at 75Ω resistance.

5) Playback a tracking tape (XH2-1) (Ref No. J-5).
6) Check that the RF waveform is flat at the entrance and exit of the oscilloscope. (See the figure I-Ⓐ) If the RF waveform is not flat at the entrance and exit (See the figure I-Ⓑ, Ⓒ) , adjust according to the adjustment from 4-2.
7) After adjusting and check satisfied with step 6), reset the data which was set in step 3) by using the adjustment remote commander. (Note 1)
   1. Select the data of page: 3 and address: 3C, then set the data: 00.
   2. Remove the power supply.

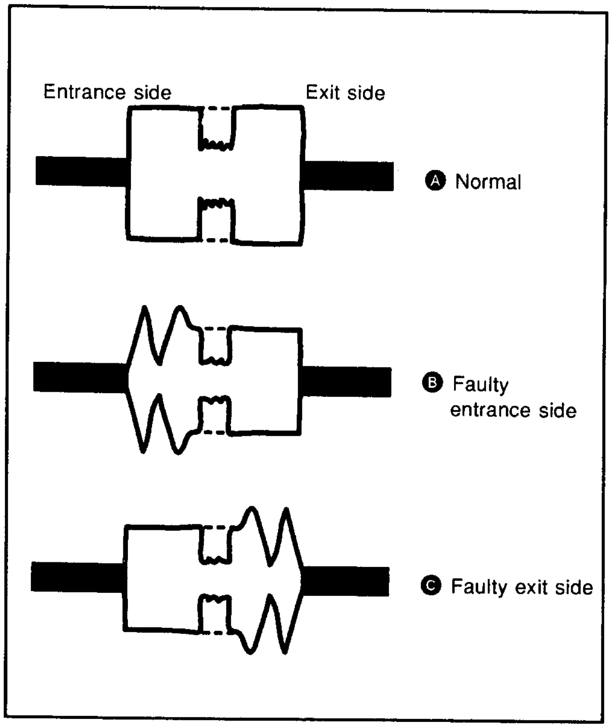
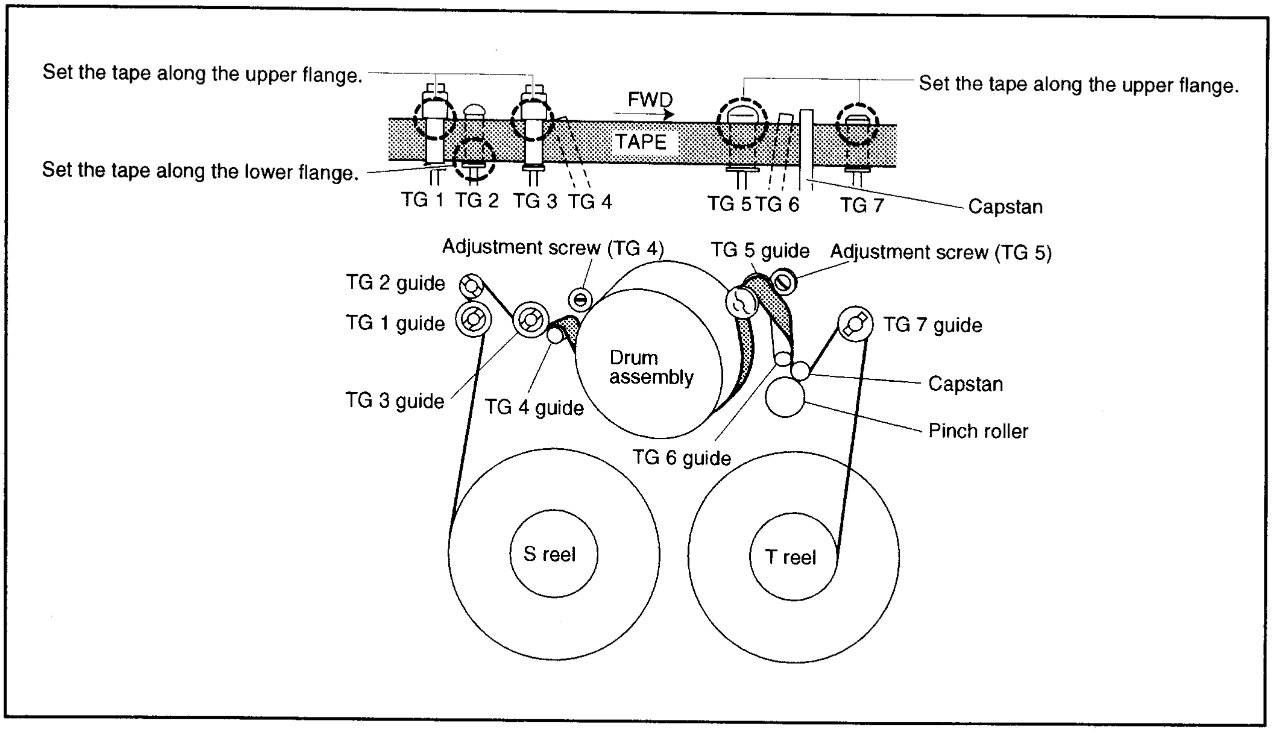

Entrance side
Exit side
Ⓐ Normal
Ⓑ Faulty entrance side
Ⓒ Faulty exit side

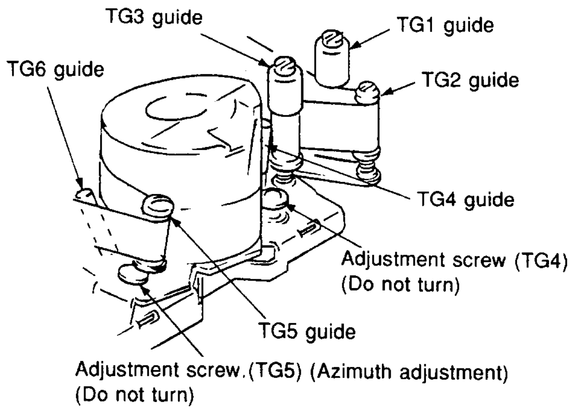
Fig. I

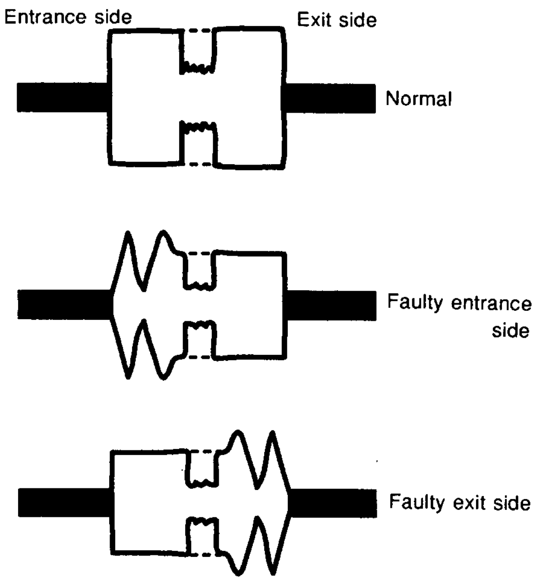

Set the tape along the upper flange.
Set the tape along the lower flange.
FWD
TAPE
Set the tape along the upper flange.
TG 1
TG 2
TG 3
TG 4
TG 5
TG 6
TG 7
Capstan
Adjustment screw (TG 4)
TG 5 guide
Adjustment screw (TG 5)
TG 2 guide
TG 1 guide
TG 7 guide
Drum assembly
Capstan
TG 3 guide
TG 4 guide
Pinch roller
TG 6 guide
S reel
T reel

4-2. TRACKING ADJUSTMENT

1) Playback the tracking tape (XH2-1) (Ref No. J-5).
2) Turn the TG3 guide so that the waveform is flat at the entrance.
3) Turn the TG5 guide so that the waveform is flat at the exit.

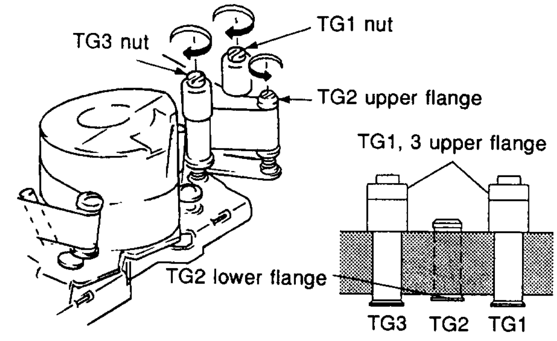
Note: Do not loosen the gate adjusting screw of TG4 and TG5.


TG3 guide
TG1 guide
TG6 guide
TG2 guide
TG4 guide
Adjustment screw (TG4)
(Do not turn)
TG5 guide
Adjustment screw.(TG5) (Azimuth adjustment)
(Do not turn)


Entrance side
Exit side
Normal
Faulty entrance side
Faulty exit side

4-3. TG1, TG2 AND TG3 GUIDE ADJUSTMENT

1) Playback the tracking tape (XH2-1) (Ref No. J-5).
2) Be sure the tape is parallel with the upper flange of TG1 and TG3 during FWD running, and check the tape is parallel with the lower flange of TG2 as well. In case there is a space between each flange and the tape, rotate the TG3 nut clockwise to be parallel with each flange as for TG1 and TG3, rotate the upper flange counterclockwise to be parallel with the lower flange as for TG2.


TG3 nut
TG1 nut
TG2 upper flange
TG1, 3 upper flange
TG2 lower flange
TG3
TG2
TG1

Confirm no change of the tracking waveform. If the tracking waveform at the entrance describes a downward curve as shown in the figure II, raise the height of TG2 lower flange to adjust the tracking at the entrance.

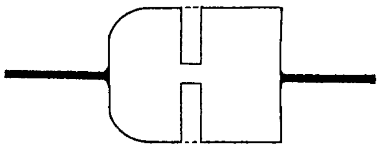
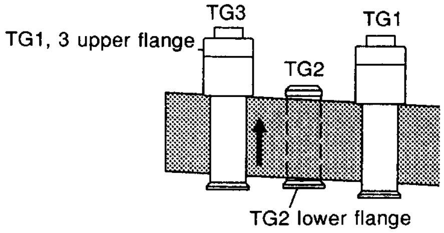


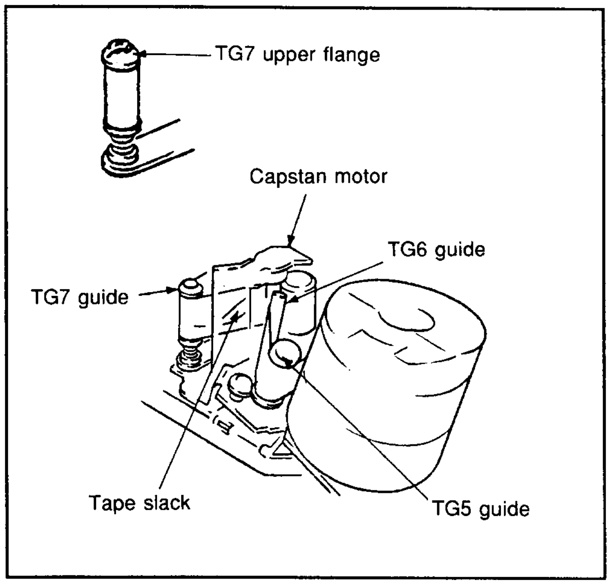
Fig. II

After adjusting the tracking at the entrance, set the RVS mode. If the tape is curled at the lower flange of TG2 guide, rotate the TG2 upper flange clockwise to correct the curl. Rotate the TG3 nut in a 180-degree arc counterclockwise, and check raising tape.


TG1, 3 upper flange
TG3
TG1
TG2
TG2 lower flange

4-4. TG7 GUIDE ADJUSTMENT

1) In the playback mode, check that the tape is not slack between the capstan and TG7 guide.
   Specification: 0.5 mm or less
   If the tape is slack, rotate the TG7 guide and adjust to correct the slack.
2) Set the REV and check the RF waveform at the exit. (See Fig. III)
3) If the waveform is unsatisfactory,rotate the TG7 upper flange in a 90-degree arc counterclockwise and check the step 1) and 2) again.
4) Apply the screw lock (Ref No. J-20) to the part of screw on TG7 guide.


TG7 upper flange
Capstan motor
TG6 guide
TG7 guide
Tape slack
TG5 guide

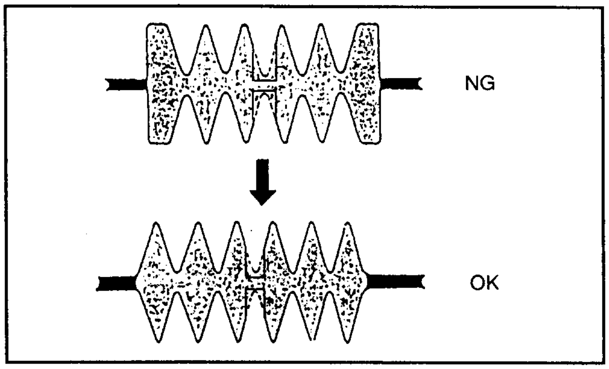


Fig. III

4-5. CHECKS AFTER ADJUSTMENTS

1. Tracking check

1) Playback the tracking tape (XH2-1) (Ref No.J-5). (See Fig. IV)
2) When the waveform's amplitude of CUE (or REV) is (A= 100%), check the amplitude of RF waveform becomes approx. 0.65A (65%) during playback.

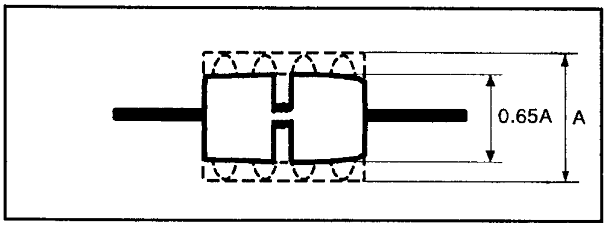
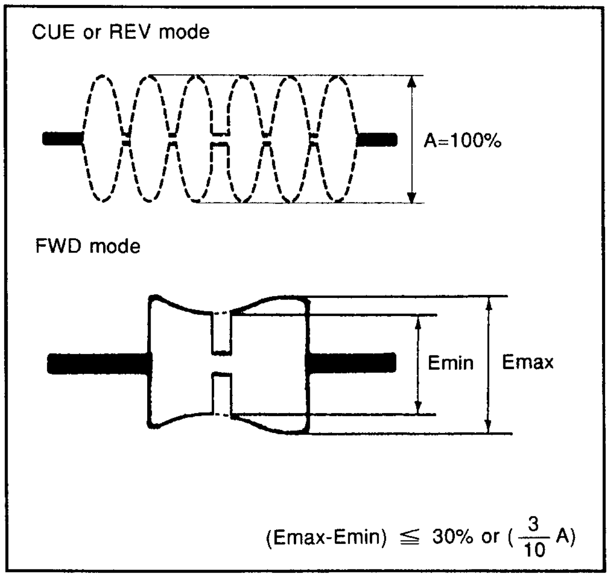


Fig. IV

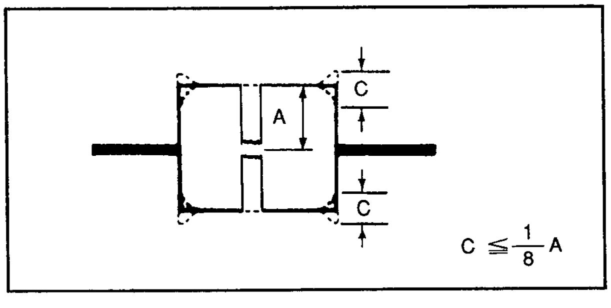
3) When the waveform's amplitude of CUE (or REV) is (A= 100%), check the difference between the minimum amplitude (Emin) and the maximum amplitude (Emax) for FWD is 30% or less. (See Fig. V)


CUE or REV mode
A=100%
FWD mode
Emin
Emax

$(\text{Emax}-\text{Emin}) \leqq 30\% \text{ or } (\frac{3}{10}\text{A})$

Fig. V

4) Check the waveform does not fluctuate badly. (See Fig. VI)



$\text{C} \leqq \frac{1}{8}\text{A}$

Fig. VI

2. CUE AND REV CHECKS

1) Playback the tracking tape (XH2-1) (Ref No. J-5) and set the REV. The peak pitches of the waveform at this time must be uniform. (See Fig. VII)
If not uniform, carry out "4-2. TRACKING ADJUSTMENT" and "4-4. TG7 GUIDE ADJUSTMENT".
2) Set the CUE. The peak pitches of the waveform at this time must be uniform. (See Fig. VII)
If not uniform, carry out "4-2. TRACKING ADJUSTMENT".

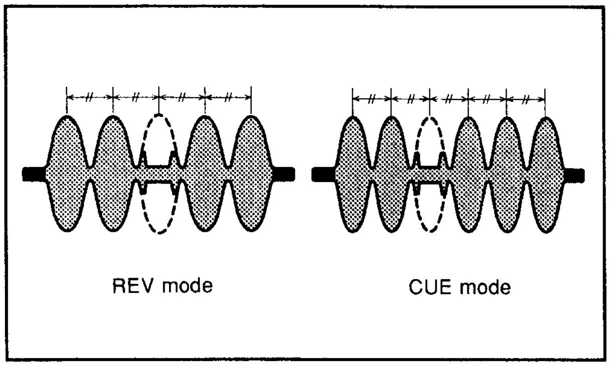
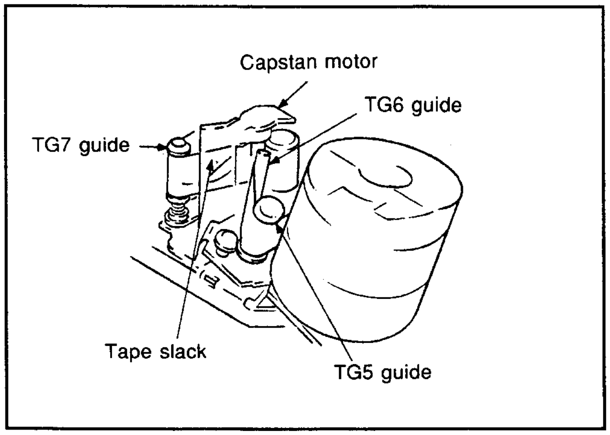

REV mode
CUE mode

Fig. VII

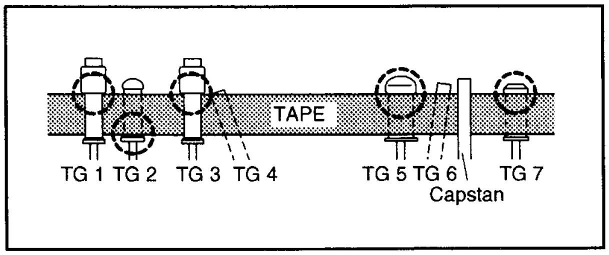
3. RISING CHECK

1) Playback the tracking tape (XH2-1) (Ref No. J-5).
2) Set the PLAYBACK mode, and check the RF waveform rises horizontally within one second. Also check the tape around the pinch roller is not slack.
3) Playback the tape after CUE/REV and FF/REW, and check the RF waveform rises horizontally within one second.
4) Repeat the checks at steps 2) and 3).

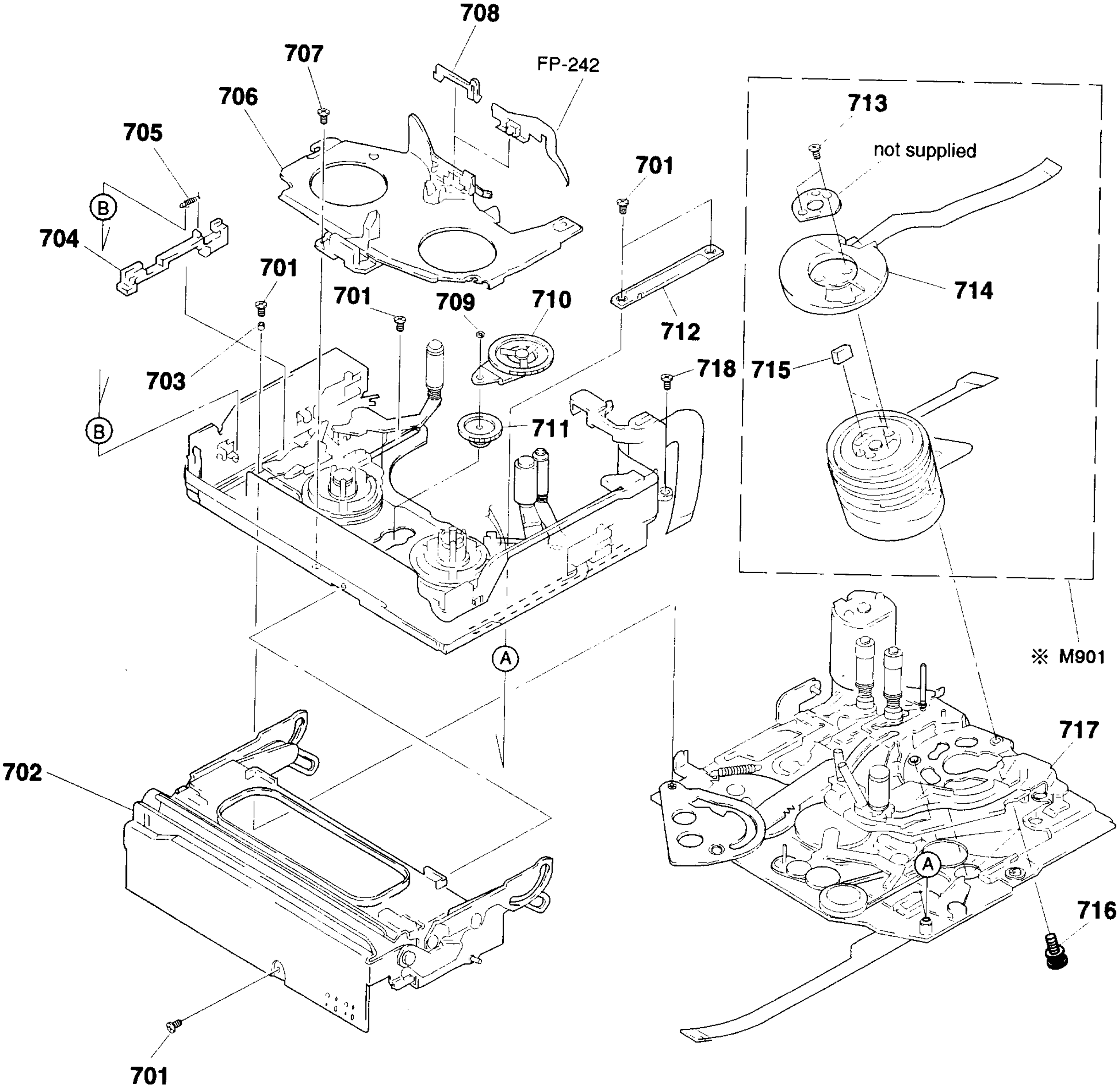

Capstan motor
TG6 guide
TG7 guide
Tape slack
TG5 guide

4. TAPE PATH CHECK

Check that the tape is not curled badly on each TG1 upper flange, TG2 lower flange, TG3 upper flange, TG5 upper flange and TG7 upper flange in the setting of CUE and REV.


TAPE
TG 1
TG 2
TG 3
TG 4
TG 5
TG 6
TG 7
Capstan

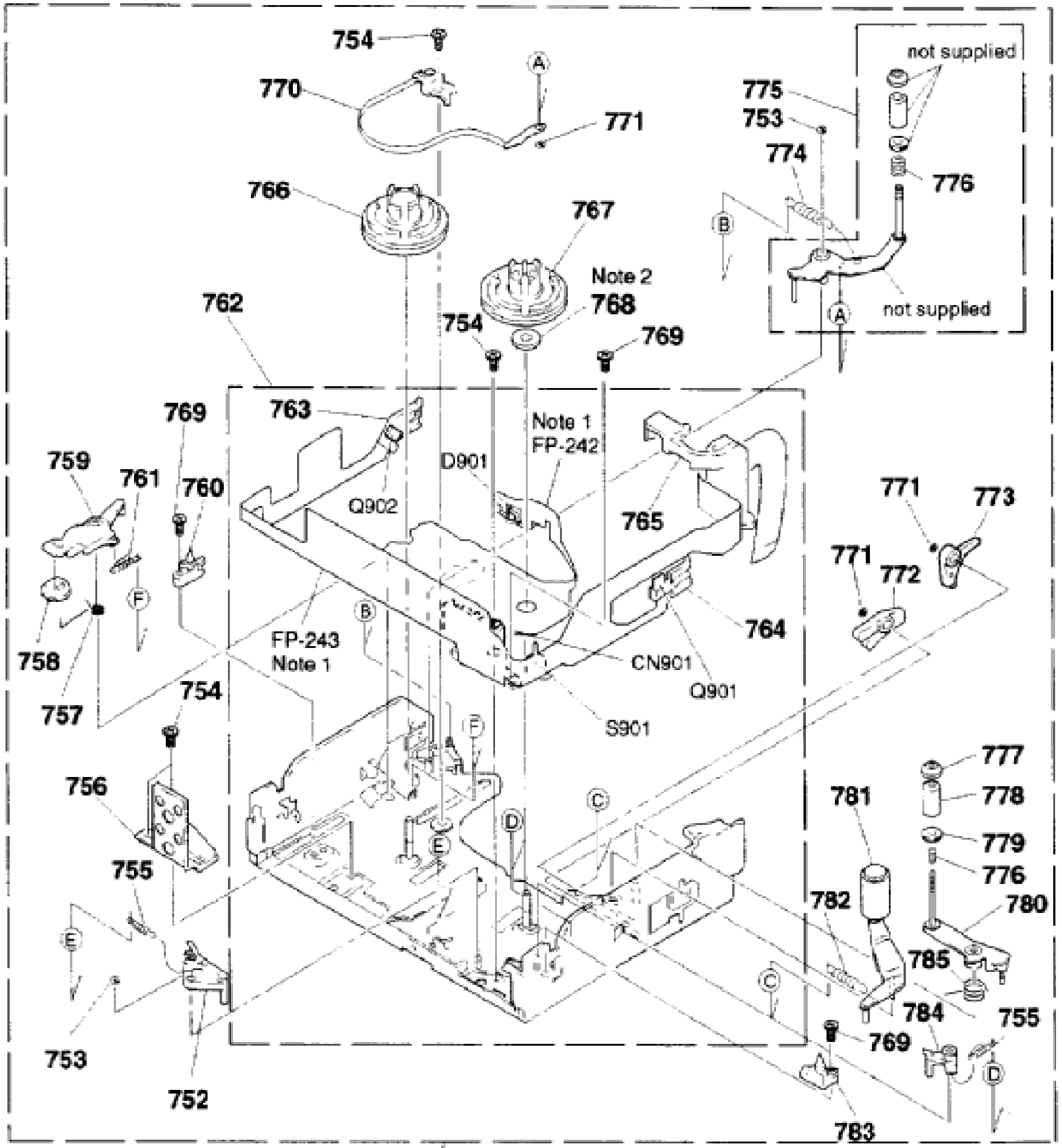
CASSETTE COMPARTMENT AND DRUM ASSEMBLIES


708
707
FP-242
706
705
713
not supplied
701
704
B
714
701
701
709
710
712
703
718
715
B
711
A
※ M901
717
702
A
716
701

LS CHASSIS ASSEMBLY

Note 1: About FP-242 and FP-243

The FP-242 and FP-243 flexible boards are installed to a chassis with a hot press, which are included in the Ref. No. 762 LS chassis (S) assembly. They are not supplied separately because the high precision for installation is needed.

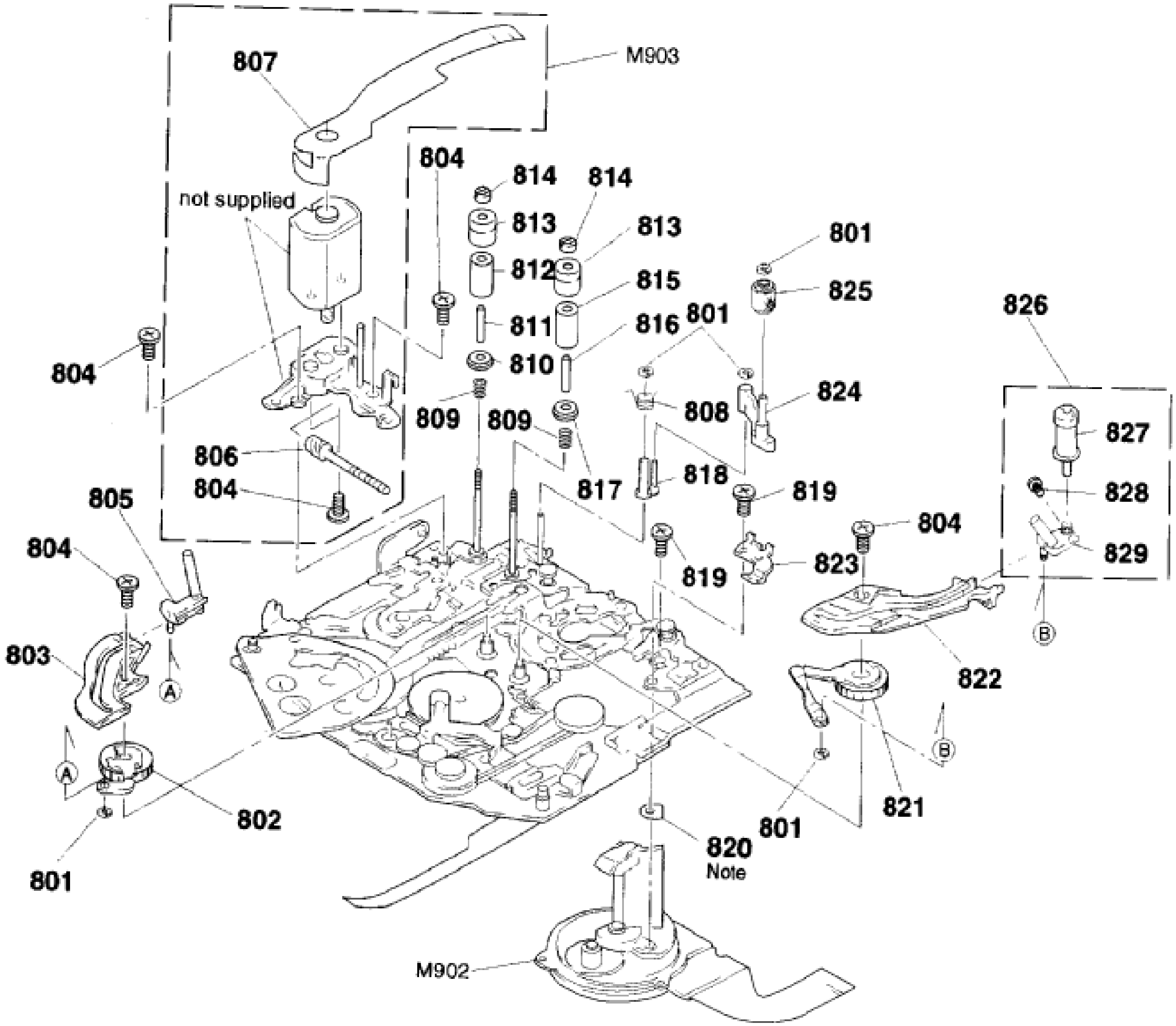

754
770
Ⓐ
771
766
767
Note 2
768
762
754
769
775
753
774
776
not supplied
not supplied
Ⓑ
Ⓐ
769
763
Note 1
FP-242
D901
759
761
760
Q902
765
771
773
771
772
Ⓕ
Ⓑ
FP-243
Note 1
764
CN901
Q901
S901
758
757
754
Ⓕ
756
Ⓒ
Ⓓ
Ⓔ
777
781
778
779
776
780
755
782
785
Ⓔ
Ⓒ
784
755
753
769
Ⓓ
752
783
751

Note 2: Selecting the T washer

Select proper parts for the Ref. No. 768 T washer according to "3-21. Height adjustment for each reel table" on page 23.

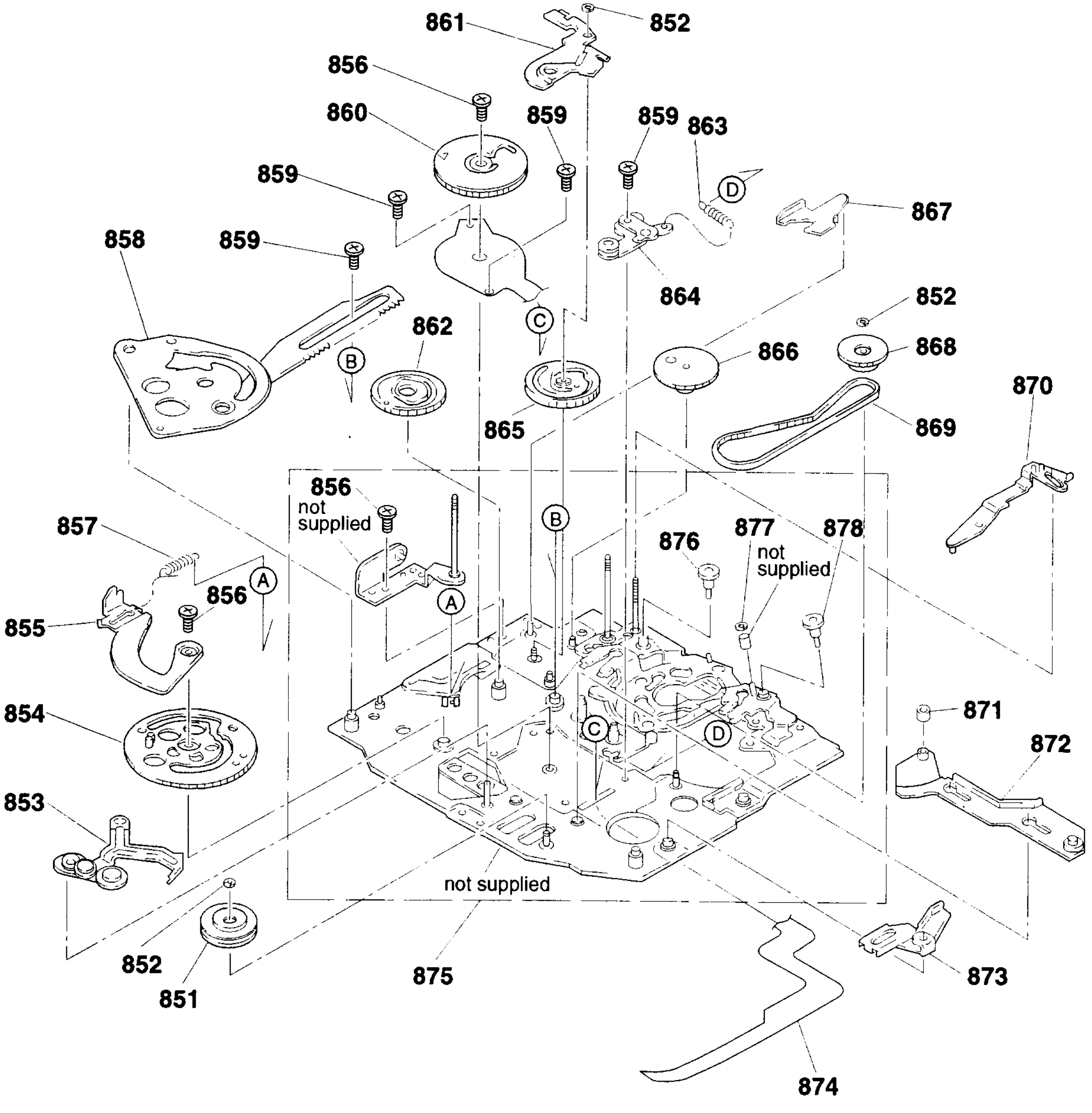
MECHANISM CHASSIS ASSEMBLY (1)

Note: Be sure to remember the installed position (one of two positions), direction and thickness of the Ref. No. 820 (head spacer) when the M902 (capstan motor) is removed. Refer to "3-9. Capstan motor" on page 15 for details. The thickness of head spacer is normally 100 µm. If it is lost, two 50 µm head spacers will be needed. Be careful not to loose it.



807
M903
not supplied
804
814
814
813
813
812
815
811
816
801
810
801
825
826
804
809
809
808
824
827
806
817
818
819
828
804
804
805
804
819
823
829
803
A
B
822
A
B
802
821
801
801
820
Note
M902

MECHANISM CHASSIS ASSEMBLY (2)



861
852
856
860
859
859
863
859
D
867
858
859
864
852
C
862
866
868
B
865
870
869
856
not supplied
B
857
876
877
878
not supplied
A
856
855
A
871
854
C
D
872
853
not supplied
852
875
873
851
874